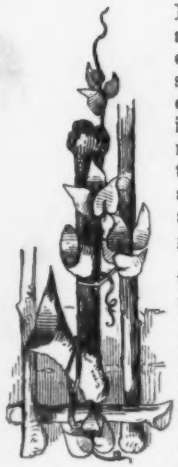
Country Life.—Social Intercourse.



IN former numbers, we have given our space to generalities, and touched upon topics universal to all. If we take the country in its realities, we shall have to regret that, generally speaking, the numbers of congenial spirits congregated in one neighborhood are too few to render what is called *society* in cities as sociable and gay as some could wish; there *are* neighbors matched for intercourse, but we are safe in saying that more frequently than otherwise "people in the country" are too much indisposed to mingle, too little inclined to be sociable, and to bring the true graces of life into assembled groups.

A country is settled often at hap-hazard. Neighbors are brought together not because there is a prospect of sociability, but because of the accident that such a site is vacant, such a farm is for sale; the surroundings in that most important point, who are to be our companions, do not always sufficiently influence the selection of the situation. The divisions which shut men and women out of each other's houses, are so numerous—the variety of education, fortune, religion (to say nothing of tastes), divides poor humans into so many classes—that when you take a country circle, and name the people who by merit or standing *should* be social, you find the reality very much diminishes the happy expectations formed.

One mode in which people of education and leisure enjoy themselves, is in dining together. The beauty of a dinner consists in uniting at one table the refined enjoyments which are enhanced by welcome smiles and good breeding. Talfourd, perhaps, has put this in the best language. It occurs in that beautiful passage in the life of Charles Lamb, where he contrasts the dinners at Holland House, and the evening parties at Lamb's more humble lodgings—both charming things to have known, and yet so different; both pleasing because peopled by agreeable persons. He says of the dinners: "All are assembled for the purpose of enjoyment. The anxieties of the minister, the feverish struggles of the partisan, the silent toils of the artist or critic, are finished for the week; professional and literary jealousies are hushed; sickness, decrepitude, and death, are silently voted shadows; and the brilliant assemblage is prepared to exercise to the highest degree the extraordinary privilege of mortals to live in the knowledge of mortality without its consciousness, and to people the present hour with delights, *as if* a man lived, and laughed, and enjoyed in this world, forever. Every appliance of physical luxury which the most delicate art can supply, attends on each; every faint wish which luxury creates, is anticipated; the noblest and most gracious countenance in the world smiles over the happiness it is diffusing, and redoubles it by cordial invitations and encouraging words, which set the humblest stranger guest at ease."

The entire description is one of those delightful efforts not to be appreciated fully but by those who have been welcomed as expected guests in some house where humanity is greeted as humanity should always be. To remember such scenes, is remembrance of felicity, whether the mansion has been that of a nabob, or the low-ceilinged rooms of Charles Lamb; the welcome the same, the congeniality greater, give us the rooms of the latter, with the wisdom and the pervading spirit of social progress. Could we impress upon this working world the pleasures which well regulated society, whether it assembles at the sumptuous board, or

gathers, at the bidding of the more humble, to a corn-husking or a "Bee," *may* enjoy when it determines so to do, we should lay down our pen contented with the feat.

But country life presents all and more of the obstacles which we have hinted at. Once we were a guest where an attempt was made, by an amiable and hospitable host, to bring together his leisured neighbors, and to form a social dining club, where the members could meet once a week and *be social.* They assembled once, but once only! And why? The dinner was all that a dinner ought to be, and it was enlivened by the good humor and good sense of all present. Why was it not repeated at the houses of the guests? There was no good reason. Perhaps sickness in the next whose term had been fixed, was the cause—indifference, we could scarcely infer—but the affair was dropped, and clever and well informed people, who could see the smoke ascend from each other's chimneys, met so rarely that it was almost painful to meet.

Depend upon it, this is not the state of things which will make the country a desirable residence. People who shut themselves up in solitude—who have no taste for the genial social afternoon and evening—who partake not in the pleasures or sorrows of their fellows—are not neighbors to be sought. In choosing a location to build your earthly mansion, the books tell you all about the advantages of a hill-side, a valley, or a stream; but give us the situation where *social life* is *cultivated* with at least as much eagerness as the farm or the garden, and where the well informed are unselfish enough to surround themselves with that charity which gives a portion of their time to the delights of social intercourse.

Too often—ah! how sadly often—the social position of neighborhoods is broken up by a single error of one or other party. Misunderstandings on trivial matters foreclose for life the pleasant meetings which should occur. We leave this portion of our topic in sorrow for the fact, and with a single quotation:—

> "Annoyances and trespasses *will* be,
> Which 'twere as well thou didst not *choose* to see;
> By gentle bearing prove thy gentle blood—
> Shine, *thou*, the mirror of good neighborhood."

LAYING OUT GARDENS, ETC.

MANY gardens are wholly deficient in any distinctive character, from the fact of their having been designed, or more properly jumbled together piecemeal, without any design whatever. It cannot be denied that such gardens often possess many pleasing features; but, from the incongruity inseparable from such an arrangement, their beauty is, for the most part, neutralized or entirely lost. It is hardly too much to say that nothing truly beautiful, as a whole, ever resulted from chance, and a garden certainly does not form an exception to the rule. Of course, it is not insisted that a design having been once determined on should be adhered to at all hazards; that would be little short of insanity, because many circumstances will often present themselves for consideration in the working of it out which will allow of a modification in the detail with great advantage; but with the principal features there should be no change. Presuming that these will be the result of careful consideration, and be thoroughly adapted to the exigencies of the case, no partial change could possibly be made without destroying the effect of the whole, reducing what would be beauty, order, congruity, to a mere chaos of discordant parts. The beauty of a design arises in a great measure from the harmony of its several parts to the whole.

Yet the great source of pleasure to be derived from a garden must undoubtedly

consist in the variety of its subordinate features, and in the various objects of which they are composed; but there must be design in their arrangement and formation if they are to produce all the pleasure of which they are capable. Variety and intricacy, when subject to order and design, are among the most powerful sources of pleasure to the senses and the mind. "Nothing," says Allison, in his Essay on Taste, "is more delightful than in any subject where we at first perceived only confusion to find regularity gradually emerging, and to discover amid the apparent chaos some uniform principle which reconciles the whole. To reduce a number of apparent dissimilar particulars under our general law of resemblance, as it is one of the strongest evidences of the exertion of wisdom and design, so it is also productive of one of the strongest emotions of beauty which design can excite." It is not, of course, to be understood that a garden is at any time to appear chaotic or confused, which is the result of chance; but it certainly should have sufficient intricacy to stimulate curiosity, and variety enough to satisfy that curiosity when excited.

The recognition of one principal feature in the scenery of a garden must not be allowed to produce monotony in the subordinate ones, or to influence their number. Nor indeed need it do so. There is generally some one point, either from the windows of the principal rooms or from some situation near the house, where the garden as a whole should form a pleasing view, and it is to this that especial attention should be given. Supposing the point of view to be elevated, as it should be, above the surface of the garden, as from a terrace, the various parts of which the garden is composed—lawns, shrubberies, single specimens and groups of shrubs or trees, flowers, and garden ornaments—should so combine as to form one pleasing and symmetrical whole. This symmetry need not necessarily be formality or mere uniformity, although it is more than probable that the immediate foreground will be made up of both; but the several parts should so balance each other as to present to the eye a symmetrical and pleasing combination. Every scene or object to be embraced by the eye at one view should possess symmetry, and to be truly beautiful it must be so. Nature is ever teaching us the importance and beauty of symmetry, and the eye, constituted to find pleasure in that quality, in spite of all the abominations in form with which false or perverted tastes have from time to time sought to allure it from its allegiance, remains, and ever must remain, faithful to itself. It may, and often does put on the spectacles of fashion, and, for a time, professes to be charmed with the abortions revealed to it; but of these it discards to-morrow what it professes to admire to-day; and true and faithful to its earliest love, ever returns to it with renewed affection.

Symmetry is not necessarily formality. Both are beautiful in themselves, but they have each their special province, and must not be confounded together.

INSECTS, NO. 5.—ILLUSTRATED.—APHIDIPHAGI.

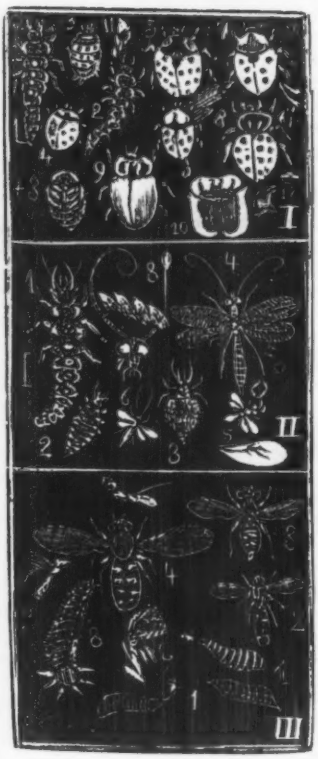
BY J. STAUFFER, MOUNT JOY, PA.

HAVING, in our last article, considered several species of plant lice, we will now consider those insects known to feed upon the aphids, in three sections. The First, larvæ of coleopterous insects—the Beetle family; in the Second, those of Neuroptera, and also the Ichneumons, which, however, do not feed, but oviposit upon aphids, and are classed among the Hymenoptera; Section Third, those of dipterous species, or two-winged Flies.

Sect. I. The family Coccinellidæ, comprised of about twelve genera, among which are the Coccinella—perhaps twenty-six species. These are usually of a

red, yellow, or orange ground color, ornamented with black spots, varying in number. Others are black, with white, red, or yellow spots; they are smooth, and very pretty, observed by every child, and called "lady birds." Common among flowers and plants in our gardens.

Figs. 4, 5, 6, and 7, show the perfect insect. Fig. 3, a pupa similar to those of Chrysomela, found attached to leaves. Fig. 11, the hatchet-shaped terminal joint of the maxillary palpi. Fig. 12, the oblong labium and bifid mandible. Fig. 13, the pseudo-three-jointed tarsi. Fig. 10 is a most beautiful insect I have met with—a species of Cassidadæ, or Tortoise Beetles (?); this had the centre of the thorax and scutellum of a burnished gold color, the centre of the elytra reddish-orange, the external margin of the elytra and thorax of a delicately veined, transparent, pearly border, concealing the head, &c. In the cabinet they lose their brilliancy. Fig. 9 is without spots—perhaps Say's Coccinella normatæ. They are difficult to name; hence, without first comparing those and others in my collection with a well arranged cabinet, I prefer silence. Figs. 1 and 2 are the larvæ, so destructive to aphids that, by placing a few upon an infested plant, they will speedily exterminate them. The parent usually lays her eggs in clusters among the aphids, where they hatch, and find their food at hand.



The perfect insect, and the larvæ, as also some species of Chrysomela, emit a viscid, yellow fluid, which, according to Dr. Hirsch, of Vienna, when bruised with the finger, imparts thereto the property of allaying the severest toothache, by simply rubbing the teeth and gums with it. It is deemed an admirable specific, and that the efficacy on the finger lasts for several days. M. V. Audouin states he has observed the union of individuals of opposite colors, but found that the eggs resulting from this union were sterile.

There is another smaller, blackish beetle of this family, usually pubescent, comprising eighteen species, known as *Scymnus*, which means a lion's whelp, and the larvæ distinguished from the last by being clothed with tufts of white, down-like hairs. Mr. Harris says they "are as sanguinary and ferocious as the most savage beast of prey," "catching and devouring, with the greatest ease, lice nearly as large as its own body, one after another, in rapid succession, without, apparently, satisfying its hunger, or diminishing its activity!" This reminds one of Paddy's greedy pig, which, after devouring a bucketful of feed, failed to fill the same vessel, head, bristles, and all.

Sect. II. Hemerobiidæ (Lace-winged Flies), remarkable for the golden brilliancy of its prominent eyes (Fig. 7), and the delicate green wings of our Crysopaperla (Fig. 4). Mr. Harris states that "it *suspends* its eggs in clusters *beneath* the

leaves where plant-lice abound." I have not found any so suspended, but standing erect on the top of the leaf of an apple-tree, on a rather long and delicate stipe (Fig. 8), sometimes in clusters like minute fungi. Figs. 1 and 2, the larvæ; Fig. 1, greatly magnified, is of a dark, purplish-lead color, beautifully ornamented with orange yellow spots; head rather broad in front, yellowish, with two black, longish spots on its middle. The mandibles are long, curved, and pointed, grooved beneath, in which the maxilla are concealed, enabling them to hold and suck their prey. The "jaws are not perforated with a hole," as stated by Mr. Harris; this is a mistaken view of older writers than Mr. H.

By opening excrescences common on the elm, infested by a species of Erisoma, I have frequently found this larva in their midst, like a wolf among a flock of sheep, making havoc to their utter extermination. The pupa I have not seen, but copy that of the Hemerobius merdiger (Fig. 3) escaping from its net-veined cocoon, about the size of a pea. Such is the case, also, with our species, I infer. Figs. 5 and 6 are two species of minute Ichneumons—captured while engaged at ovipositing upon the aphids on the cabbage—called blight, A. brassica (Fig. 5), and its wing; this has a brilliant gold bronze thorax and abdomen; the antennæ, short, clavate. The other had long, filiform antennæ. Those, again, have their parasites, a species of Chalcididæ; are said to deposit their egg into the maggot of the Ichneumon already preying upon the vitals of the Aphid, thus producing a maggot within a maggot within so minute a carcass. This reminds one of Mr. Stephen's quaint couplet in his *Illustrations*, vol. vii., which says:—

> "Great fleas and little fleas have smaller fleas to bite 'em,
> The smaller fleas have lesser fleas—so on, *ad infinitum*."

Sect. III. Family Syrphidæ. These are gayly colored flies, frequenting flowers, and sporting themselves in rapid motions. Some, like the Volucella, often mistaken for Bombi themselves, lay their eggs in the nests of Bombi and Vespæ. Fig. 8, the larvæ. Fig. 9, the plumose antennæ of the fly. Figs. 2, 3, and 4, are those which deposit their eggs in the midst of the aphids. Fig. 1 represents the oddly-shaped larvæ, without legs or eyes; they project their attenuated end, armed with a mouth and triple-darts, and seize upon an aphid, elevate, and suck its juices. A number will speedily rid a plant, strewing the ground with the carcasses of their victims. When ready to undergo their change, they attach themselves by means of a glutinous secretion; when the body contracts and hardens, the pupa is then formed within the skin of the larva. Fig. 5 is the antennæ. Fig. 6, the mouth of the perfect insect.

Much has been written on this subject by men of science—enough to fill a volume—but this must suffice, as it has already become too lengthy. We have now considered the natural means provided. The artificial means to be employed for their destruction, consist in fumigation with sulphur and tobacco, for those in greenhouses, where a moist atmosphere is requisite. By bending over the ends of branches infested, and holding them a few minutes in warm soapsuds, is good. The brine from pickled pork, and the liquid remaining after making hard soap, applied to the roots of hardy plants infested, is good. Scrubbing trees with a stiff brush and a solution of potash in spring; scraping off the loose bark from fruit-trees, down to the ground, uncovering a portion of the roots, and filling the chinks with grafting cement; replacing with fresh earth; or melt equal parts of resin and fish-oil together, and apply it warm with a brush. Syringing with pure water will clear rose bushes from the A. rosea. To conclude, I would recommend the reading of, and considering, the 10th and 11th verses of the third chapter of Malachi.

HYBRIDIZING THE VINE, ETC.

BY WM. N. WHITE, ATHENS, GEORGIA.

I SHOULD have preferred waiting until it was again in blossom before discussing further the practicability of hybridizing the vine, as, with its floral organs before them, your readers could then decide for themselves as to the difficulty or ease with which it could be effected. But as some interest seems to be felt in the matter, I will state more fully my views, which they can verify, if correct, at that time. Meanwhile, those of them that have access to the article "Botany" in the new edition of the *Encyclopædia Britannica*, or to Gray's *Botanical Text-Book*, can get a very good idea of the structure of the vine blossom from the enlarged figures there given.

That the vine cannot be hybridized, is of course like any other negative proposition, scarcely possible to be proved; and that it is nearly impossible, is nearly as difficult to establish. It will perhaps not be so difficult to make evident, that if Mr. Rogers, as appears from your last issue, has succeeded in this, he has been very fortunate; that if these vines produced (being true hybrids), and set their fruit well, and seed freely, it is remarkable; and should their fruit prove valuable, and they be brought into general cultivation, it will be the first instance of the kind in history, and I for one congratulate him on his success, if he has really succeeded.

The question is not one of *cross-breeding* merely, or the fertilization of one variety by the pollen of another variety of the *same species* (itself a difficult matter in the vine, as I think), but the *intermixture of species* themselves. Whatever success Knight had in his experiments, was not in hybridizing, but in cross-breeding. The only hybrid fruit that I remember, was his almond peach, which was good for nothing.

The controverted point in the report of the Georgia Committee is the observation of Le Conte: "Although, among some families of plants, hybrids occur naturally, or may be formed artificially, yet it is difficult to understand how this can ever be the case in the genus Vitis. In forming a hybrid, it is necessary to emasculate the flower we wish to produce fruit, and to impregnate its pistil with the pollen of some other species. This is impossible in the present instance, on account of the minuteness of the flower and its parts of fructification," together with the additional remark of the Committee: "Nor is this all. He might have added another difficulty. The petals are caducous, and cohere at their tips, forming a little cap, which, in the act of falling off whole, draws over from one side or the other, almost invariably, the pollen from its own stamens upon the pistil. The chances then are that the operator on so minute a flower, in the act of removing this cap, and then the stamens, would already have fertilized the pistil before applying the pollen of the species or variety selected. We would not, however, assert that hybridization, naturally or artificially, is absolutely impossible, but *nearly* so," &c.

It is true, this cap is easily removed. Dr. C. W. Grant informs me that he has also found no great difficulty in taking out the stamens, or in applying the pollen, which he has done repeatedly; but the operation succeeded only so far as to render the action of its own pollen abortive. The florets operated upon produced no fruit, and the cause of this sterility lies undoubtedly in the parts of the floret being so minute that he could not remove the stamens without injury to the stigma. Indeed, the minuteness of the parts may be judged from this: After we had

noticed that the species rotundifolia was six-petalled, it required close scrutiny with good eyes to determine whether there were really six stamens or but five, without separating them; and where the eye can scarcely distinguish, it is difficult, certainly, for the hand to manipulate.

Another difficulty in hybridization is, that the blossoms of the foreign grapes (at least with us) open much earlier than our native species; but this is not insuperable, as the pollen may be kept some time.

But, after all, when the whole manipulation has been performed, the pollen applied, and when fertilization follows, there is no certainty that there has been a true cross. Gaertner, the best authority on hybridization as far as observation on experiment could qualify one, says that, in any plant, "the influence of its own pollen is so preponderant over even that of a great mass of foreign pollen, that a microscopic quantity of its own can annihilate that of the other." Again: "The fact" (says De Candolle, *Veg. Physiologie*, p. 705) "which the experiments of Kohlreuter have best demonstrated is, that the smallest quantity of pollen is sufficient for fecundation. Hence arises one of the great difficulties of hybridizing, as when a stigma has been acted upon by its own pollen, it is not susceptible of being fertilized by another species." The same author also states (page 479) that "in many genera, fecundation executes itself in the unexpanded bud, or at the moment of expansion, or *in the shelter of certain special integuments, as the cohering petals of the vine.*" Let it at the same time, in this connection, be remembered that when the stigma of any floret is in a fit state to receive the pollen of another species, its own pollen is also in a fit state to fertilize it. Bearing the above facts in mind, I for one do not feel inclined to change my opinion, already expressed, that "the chances then are that an operation on so minute a flower," or one where the parts are so near each other, "in the act of removing this cap, and then the stamens, would have already fertilized the pistil," &c. Mr. Rogers made his experiments "when the blossoms on the native vine had *begun to open*;" then "a few clusters were selected on which to operate from those *most forward*, and nearly ready to open." If the operation was so carefully performed as not to injure the stigma, it is probable that, in any ordinary vine, it would have been self-fertilized; but as, in *this variety, only from four* to *eight berries are found ordinarily to set*, it is probable he was so fortunate as to happen upon a variety in which the anthers are frequently or generally imperfect in most of the florets, while the stigma was in its normal condition. Such being the case, those in which the anthers were perfect probably did not hybridize, and of course showed the native leaf in the seedling produced, while, with a portion, I am inclined to think a *cross* of species *was effected*, especially as the process seems to have been conducted with extraordinary care. There then may have been an exceptional case, but we are confident that every one of the readers of the *Horticulturist* will, after examining the florets of the vine for themselves, agree that it presents unusual obstacles to the hybridizer.

That hybridizing, in general, is of itself no easy matter, we shall show in another article.

A WORD FOR EVERGREENS.

BY THE REV. A. D. GRIDLEY, CLINTON, N. Y.

It is a little remarkable that no more attention is given, in our country, to the planting of evergreens. In England, where the winters are shorter and less severe, this work is pursued with great enthusiasm. Only six or eight species

are indigenous there; yet zealous planters have traversed the globe in quest of new varieties, and have now acclimated in that little island upwards of seventy. Our own country has more native Conifers than any other, and our climate favors the introduction of many from foreign lands; yet these treasures are comparatively unappreciated by us; so that, what has been said, in general, of our indigenous trees and shrubs (that "one must travel to Europe to see the best collections of them"), is unquestionably true of our evergreens. Perhaps their very commonness has something to do with our indifference for them. Perhaps the national character has not yet outlived the wood-chopping era, and still looks upon forest-trees, and evergreens, in particular, as signs of primitive desolation and barbarism.

To some eyes, evergreens have a melancholy aspect, especially so in winter. The harping of the winds through their leaves is to them a sound of wailing. Their branches ermined with snow, are painful reminders of departed summer; the trees seem to have been caught and overpowered by winter, and to struggle pitifully against surrounding horrors and gloom, wholly unable to dissipate them. This feeling, of course, is very much a matter of taste, which reasoning can do little to change. But it may properly be questioned whether the prevailing sadness of the wintry *season* has not been transferred unconsciously, but ungenerously, to the trees themselves, which tend to give that season a look of cheerfulness. Alas! for us, if that which was designed to be a beautiful *compensation* for an admitted evil, is made a sad suggester of the evil itself! We also surmise that this prejudice has arisen chiefly from the sight of the sickly, one-sided specimens of Balsam Fir with which our front yards and our door-yards have so long and so exclusively been planted. One who has seen the rich variety of evergreens now being introduced into cultivated grounds, here and there, can hardly complain of their monotony. The waving plumes of the lordly pines, the aspiring cones of the stately spruces, the dense, browsy masses of the symmetrical arbor-vitæ, the feathery and pendulous branches of the ever-verdant hemlock, the neat, tapering shafts of the silvery juniper—surely, there is no lack of beauty and variety here.

It will be found true, we think, that those who have no liking for evergreens, are generally the young and frivolous. Deciduous trees are more to their taste, being expressive of lightness and gayety. Thoughtful men, and those of advanced years, prefer the soberer tints and the steadfast verdure of evergreens; yet the foliage of those trees is not so steadfast as to be unvarying. Who has not observed the air of freshness it assumes on the opening of spring? And then, in early summer, the new growth vies in beauty with the foliage of other trees; the pines and spruces sending out soft, yellow tufts—the one shooting upward, the other hanging down, and enlivened with the delicate pink cones of the tree; the firs, with bluish-gray tufts and ascending cones; and the hemlocks, fairest of all, "every finger-tip of their outspread palms thimbled with gold, and every tree looking as if all the sunsets that had ever been steeped into its top, were oozing out of it in drops." And besides, who has not observed the pleasing effect which evergreens give to the pale green leaves of deciduous trees in spring? also, the depth of tone which their peculiar forms, colors, and foliage, impart to groups of trees, even in midsummer—an effect which can be gained by no possible combination of deciduous trees; also, the fine background they furnish to flowering shrubs and plants; the richness they add to the kaleidoscope of autumn, and the heightened beauty they give to trees and shrubs which retain their scarlet and crimson berries throughout the winter?

In the view of the writer, one of the strongest arguments for a liberal planting

of conifers about a country residence, is the cheerful air they lend to a home during the spring and autumn. There is a month or six weeks in spring, after the snow has disappeared, before deciduous trees put forth leaves. The grass is green upon the lawn; the early bulbs, and a few other plants, are in blossom; the birds are singing; bees are humming; while yet, the trees are as naked as in winter. Introduce, now, a variety of evergreens on all sides of that lawn, and you give the place a summery look at once. So in the autumn. After deciduous trees have shed their leaves, there is often a period of six weeks or two months when a country place, otherwise desolate, needs only a good supply of evergreens to prolong the season of verdure. Plant the grounds liberally with such trees, keep the grass and walks in good order, and in the hazy light of a warm day in November, we could find perhaps as much enjoyment there as amid all the leafy pomp of summer. We could not, indeed, plant our grounds wholly, nor even chiefly, with evergreens. Trees of this kind should be sufficiently numerous to make the place pleasant, even when other trees are leafless; yet deciduous trees should so abound as to give the premises a new and heightened charm during the vernal season. As among ornamental shrubs, those are the most desirable whose foliage is persistent and fresh throughout the summer, and which take on new attractions when in flower, so a country-place is best planted when it has evergreens sufficient in its composition to make it always cheerful, yet has also deciduous trees enough to give it additional beauty on the opening of summer.

Not the least argument for evergreens is the sense of protection and comfort they afford to a country residence. Here, use and beauty are happily combined, the use itself becoming an element of beauty. The value of evergreens as a protection during the stormy months of the year, can hardly be over-estimated. In all situations, but especially on elevated sites, the winds batter in pieces, and often kill, flowering plants; they nip the buds of fruit-trees, and break down and mutilate choice ornamental trees. Considering that it is chiefly the violence of the winds, and not the severity of the cold that harms our plantations, we see the importance of giving them suitable shelter. Surround a bleak spot with a belt, or with scattered groups of evergreens, and the effect will be at once perceptible. You may then plant the finest trees upon the glade behind them, and they will grow erect and unmarred; the choicest shrubs and most delicate plants will develop all their beauty of leaf and flower; fruit-trees will grow luxuriantly, their blossoms will not be blighted, and their fruit will hang to the stem until it is fit for the planter's use. And would not the presence of a goodly number of such trees prevent the frost from penetrating the ground as deep as it would, if left naked to the winds? Certain it is, that when planted on the exposed sides of dwellings, they protect them sensibly from the blasts of winter, and cheat the cold season of half its dreariness. They may make little difference in the temperature as marked by the thermometer, yet they break the force of the wind, subdue its angry tones, and prevent it from rushing in at every cranny and crevice of the building. They give the premises without a sheltered and warm aspect, even in the severest weather, and make out-door labor and recreation comfortable and pleasant. The quiet, home-like *look* of such a place, as well as its actual comfort, is a strong argument for the liberal planting of evergreens.

Thus much for the beauty and usefulness of this class of trees. Let us now enumerate, as well as we can, the leading hardy varieties. And here it is in place to remark, that several varieties which were considered hardy, a few years ago, must now be ranked as tender. For example, before they had been fully tested, the Cedar of Lebanon, Deodar Cedar, Himalayan Spruce, *Picea Webbiana*, and *P. cephalonica*, *Torreya taxifolia*, *Araucaria imbricata*, *Cryptomeria japonica*, and

others with still harder names, were classed by sanguine amateurs as "perfectly hardy." Some of them, perhaps, had been sadly frost-bitten, and others killed outright, by the winter; but that was owing merely to some mistake in planting, or to an unsuitable location, or to the severity of the season, or to a want of familiarity with the vicissitudes of our climate—a pardonable fault, surely, in newly-landed foreigners! But somehow or other, those mistakes have continued to be made. The location and soil are only seldom just right; trying, "peculiar," "unprecedented" winters continue to succeed each other, and the natives of warmer countries persist in being pinched by our hyperborean climate. Here and there, a persevering arboriculturist manages, by dint of draining and blanketing, to carry a few shivering, adopted citizens through several winters; but they come out each successive spring with the loss of several limbs, or of their heads, and, after that, their life isn't worth much. All honor to such enterprising planters! They deserve the thanks of their countrymen for their difficult and often costly experiments. We can appreciate somewhat the feelings of those who

> "With unsparing hand,
> Would cull the beauties of each land,
> And blend them in one favored spot."

We are not wholly strangers to the delight of carrying safely through the winter trees indigenous to milder latitudes. "Stolen waters are sweet." And with those who have the means and leisure for this pastime, we can find no fault; but as for calling such trees "hardy," and recommending them for general planting, what sane mind can do it? There *are* hardy evergreens, both native and foreign, and sufficient in variety to satisfy any reasonable taste; those which long experience has proved to be hardy in the latitude of Central New York, and to deserve general recommendation, are chiefly the following, and named in the order of their excellence:—

1. *Norway Spruce.*—We place this first not only because of its beauty, but for its superior hardiness, rapidity of growth, the ease with which it may be transplanted, and the freshness of its color at all seasons of the year. Its foliage is heavier and less rigid than that of its American cousin. Its limbs sometimes take a drooping and graceful sweep, and the shorter side-branches hang down like rich fringes or tresses, in an exceedingly pleasing manner. It is a beautiful tree when young, every year improves it, and, in old age, it is truly venerable. It makes an excellent lawn-tree, and answers well for groups, and belts, and hedges. It is fast becoming a popular rival of the old-fashioned Balsam Fir.*

2. *The Hemlock.*—This tree is more impatient of removal than the last-mentioned, is slower in growth, and though perfectly hardy, the extremities of its twigs are sometimes slightly damaged by the winter winds. Otherwise, it deserves the first place on our list. Its foliage is dense, yet feathery and graceful, and retains its color fresh throughout the year. Whatever charges of stiffness and monotony may be brought against other evergreens, none can be sustained against this. Its branches do not shoot out stiff like rods from the trunk, but each one has a slender and flexible termination, even the central and highest shaft bending over at the top, and giving the whole tree an air of graceful and modest beauty. Perhaps the most favorable condition for viewing this tree is when its branches are wreathed with newly-fallen snow, or jewelled with drops of dew or rain. We wonder not

* "It has added not a little to our interest in the Norway Spruce to learn, of late, that fossils of it have been found in the rocks of a by-gone age. It would seem that it was too good a tree to perish altogether with the Northern mammoth, hippopotamus and rhinoceros, which once roamed beneath its branches."—*Testimony of the Rocks*, p. 153.

at the fond enthusiasm with which the poet Willis writes of the hemlocks around his mountain home. Speaking of this tree in its spring dress, he says: "Of all Nature's renewals, I think this is the fairest. The old foliage forms such an effective contrast for the new. The child-blossom and his predecessor are heightening graces, each to the other—neither so beautiful alone, and both finding room enough, and enjoying the same summer together. Parent and child are one glory. The home-tree was not stripped and deserted for the new-comer. Of that most precious of our wayside religions—the homestead-hallowing—it seems to me that the Hemlock should be the chosen emblem." A historian tells us that when Xerxes first beheld the oriental plane-tree, he halted his army "to admire its pulchritude and procerity, and became so fond of it, that, spoiling both himself, his wives, and great persons, of all their jewels, he covered it with gold, gems, necklaces, scarfs, bracelets, and infinite riches; * * * * and when he was forced to part with it, he caused the figure of it to be stamped on a medal of gold, which he continually wore about him." Would Xerxes have done less on first seeing the Hemlock? No "far-fetched and dear-bought" tree equals this. It is suitable for any place or purpose. For a lawn, nothing can be more refined and elegant; it groups well with itself and with other trees; it makes a compact screen and hedge, being improved by an occasional shearing. It is one of the best trees for cemeteries (for private lots, especially), because of its unchanging verdure, and because it can be kept, by pruning, within the smallest compass. If transplanted on a misty day in spring, with a ball of earth about the roots, there is no difficulty in removing it. After planting, the roots should be mulched with leaves, tan-bark, or flat stones.

3. *The White Pine.*—This native tree (sometimes called Weymouth Pine) is superior to any known foreign variety. *Pinus excelsa*, of the Himmalay Mountains, rivals it in many respects, but is proving itself less hardy at the North than was expected. The White Pine is a stately tree, hardy, easily transplanted; its leaves a deep, rich green, arranged in heavy silken plumes, which, when swayed by the wind, have almost the freedom and grace of deciduous foliage. Its balsamic fragrance is a pleasant odor, and is thought to possess medicinal properties. The slightest motion of the wind through the branches produces a silvery murmur, which a poetical mind might say is the echo of a storm at sea, roaring around a brother pine, the mast

"Of some tall admiral."

It retains its greenness throughout the winter. It is too large a tree for small premises; its most appropriate place is in extensive parks, and on the outskirts of cultivated grounds.

4. *Scotch and Austrian Pines.*—We place these together, because they are similar in habit and merit, though, perhaps, the Scotch is preferable of the two, on account of the pleasant blue tinge of its foliage. The Austrian is a noble, dark, sea-green tree, almost sombre, yet so grand and bold in its out-spreading branches as to command universal admiration. In these last respects, *Pinus ponderosa* (a new-comer from the mountains of Oregon) bids fair to outstrip it; but it has not yet been fully tested.

5. *Balsam Fir.*—This time-honored tree deserves this rank, both for its real merits and for the associations connected with it. Hardiness, ease in transplanting, peculiarity of color, symmetry of form, the persistency of its verdure throughout the year—all combine to recommend it. It is specially suited to small grounds. No tree forms a finer contrast with others. When mingled with deciduous trees, it shoots up its dark spires among their lighter spray in a most picturesque man-

ner; and even in winter, its effect among leafless trees is quite pleasing. The objections made to it are, confessedly, somewhat formidable. It is stiff and prim, and, in old age, becomes lean and shabby. But is it stiffer than the European Silver Fir which seeks to supplant it? If set in a deep, generous soil, it retains its good looks for twenty years or more; and a tree which holds its own for a generation, is not to be despised. When it has outlived its beauty, it can easily be displaced for a younger and better. It has been so long planted by the door-step of cottage and mansion as to become a household tree, and it should not be hastily set aside. The European Silver Fir, though an exceedingly neat and symmetrical tree, and one which grows old more gracefully than the Balsam, can hardly be relied on at the North. Good specimens are occasionally seen in the latitude of Newburgh, on the Hudson, but it often loses its leader in winter, even as far south as Pennsylvania.

[When young, it does so, though not as a rule. When established, we have found it uniformly hardy, and remember what a beauty it will become at the time the Balsam is utterly unsightly, and must be removed.—Ed.]

6. *Black and White Spruce.*—The White is not very common, but good specimens, well grown, are hardly inferior to the Norway Spruce. One in the grounds of the late Mr. Downing, is the admiration of every visitor. The Black Spruce is more abundant, and, as generally seen, has smaller branches and thinner foliage than its Norwegian relative. It makes an excellent leader in a group of other trees. Its numerous pendulous cones are not the least of its attractions.

7. *Siberian Arbor-Vitæ.*—This resembles the American variety, but its foliage is denser, darker, and becomes less browned in winter. Its hardiness is evinced by its origin. It is one of the best trees "for general purposes." As an ornamental screen, it ranks next to the Hemlock. Its slow growth recommends it for planting in small yards and in cemeteries. [It is unfortunately yet expensive, but must ultimately be our evergreen hedge-tree.—Ed.]

8. *American Arbor-Vitæ.*—Here comes the servant of all work—the tree which makes itself so generally useful. A child can transplant it. It is not fastidious about soils or exposure; nay, if any delicate brother tree shrinks from the north wind, it willingly shelters and nurses it. If promoted to a conspicuous place, it bears its honors well, and takes on as courtly a grace (at least, during the gay season) as most of its associates.

9. *The Junipers.*—Of these, the common American and Swedish are the most desirable. They are small, pyramidal trees, seldom reaching higher than twenty or thirty feet. The branches are sometimes loose and straggling—at others, compact and upright. The foliage is a silvery green, with a slight bluish tinge. By occasionally tying-in the branches, and giving them a little pruning, the tree is made to resemble, in form, a miniature Poplar. The Junipers are somewhat formal in their habit, but, in shape and color, they strongly contrast with other trees, and when set near buildings or other artificial objects, their effect is quite pleasing. Aside from their lively color, they make appropriate trees for cemetery lots.

The *Red Cedar* is not a tree of the highest excellence, but deserves a place in large collections. It varies much in form and color, being sometimes dense and conical—at others, open and spreading; sometimes a dark grass-green—at others, with a tinge of blue. The chief defects of this tree are its rusty hue in winter, its liability to lose its lower branches, and to become shabby on the side exposed to violent winds. Planted in a sheltered situation, and on soil congenial to it, it often becomes a very handsome object.

There are other hardy evergreens, of undoubted excellence, which might be

noticed here, had we sufficient space; such as the Corsican, Cembrian, Dwarf, and Sabinian Pines, Cracovian Juniper (*Picea pichta*), the American Yew, and others; but those already mentioned embrace, in our judgment, the cream of the catalogue. If these are arranged with skill, and well cultivated, they will give to a plantation as great variety as can reasonably be desired.

A good deal has been said of late respecting the importance of evergreen shrubs. Amateurs have cried out: "Oh, for the Hollies, Laurels, and Rhododendrons of England!" Such shrubs would certainly add much to the beauty of our home-scenes in the fall and spring; but what could we do with broad-leaved shrubs in midwinter, with the snow two or three feet upon them? Would they not be demolished? And has not Providence wisely limited such shrubs almost wholly to regions where but little snow falls, or caused them to grow where they will be sheltered by the thick overhanging boughs of trees?

In conclusion, we beg leave to offer a few words of exhortation. Dear friends, plant evergreens for their beauty and their use, and plant those only which are of undoubted hardiness and excellence. Plant them not in the autumn, to be lashed about by the winter winds before they have become established, but in the spring, in cloudy weather, and when they are just beginning to make their first growth. Take pains to give them kindly soil, and then to mulch the roots. If carelessly transplanted, they *ought* to die. Choose small, vigorous trees rather than large ones. Let Dr. Johnson growl as he may about "the frightful interval between the seed and the timber." Plant a few choice specimens singly upon the lawn, with their lower branches resting upon the sod, and their unbroken foliage sweeping upward, and floating outward in queenly grace and freedom. Plant some in groups and masses, and so dispose them as to secure depth and richness of color in contrast with lighter shades, always avoiding, however, too great dissimilarity of form. Plant the larger and coarser varieties for outposts and guards, to check the roystering winds, and the smaller for screens and thickets, to hide disagreeable objects, and to conceal pleasant prospects in advance. By all means, avoid a common and very great fault of planters, viz: setting trees so near to roads and walks that, in a few years, they overspread them, and have to be cut down or be badly mutilated. Study carefully the capacities of every tree before planting it. "*In bello, non licet bis errari*," and this is equally true in planting evergreens. Have you a passion for evergreen shrubbery? Then, try your hand first with the Mahonia, American Yew, Yucca, Ink-berry bush, Box-tree, and Evergreen Thorn, planting them in the shade of other trees, and if you succeed with these, add the native Holly, Laurel, and Rhododendrons, to your list.*

And finally, let not your work end with *planting* trees and shrubs. Feed them from year to year with generous food, that they make a vigorous growth, and always wear the bright hues of health. And in the words (slightly altered) of an old planter: "What joy may you have in seeing the success of your labors while you live, and in leaving behind you, to your heirs or successors, such a work that, many years after your death, shall record your love to your country? And the rather, when you consider to what length of time your work is like to last."

* The American Holly grows wild as far north as New Jersey and Massachusetts; the Laurel (*Kalmia latifolia*) abounds in Connecticut, and the Rhododendron *maximum* is found in New York, New Hampshire, and Maine. [By Ink-berry bush, our author doubtless means *Prinos glaber*.—Ed.]

THE HARTFORD PROLIFIC GRAPE AND BOSTON PEAR.

BY GUNDON W. RUSSELL, HARTFORD, CONNECTICUT.

About six years since I sent to *Hovey's Magazine* an account of the Hartford Prolific Grape; it may be found in No. CCVII. page 114. At the time it was thought to be too modest a statement by those who were acquainted with the Grape; but as it is not a common fault to underrate a new fruit upon its introduction, it may be pardoned in this instance. I write you now to say that the experience of subsequent years has impressed me more favorably with its good qualities. I have never pretended, nor has any one else who is acquainted with it, and able to judge, that it is superior to the Isabella, for it is not; but it approaches to it in quality, and ripening, as it does, two or three weeks earlier. It is a very valuable variety for those localities where the Isabella does not ripen; and it is also valuable anywhere for those who desire this fruit in succession.

If it has any fault it is that the berry does not adhere to the stem with as much tenacity as some other varieties. I have not known it to drop from the vine before maturing, or when mature, but from the cluster some time after it has been picked.

In the history which I gave of this variety I stated that it was an accidental seedling in the garden of Mr. Paphro Steele, of this town. A number of vines came up together, and were allowed to fruit; all were so inferior except this, that they were destroyed; they were supposed to be destroyed, but one of the worthless ones remained. This fact I did not learn when I obtained the materials for its history, and was not aware that two different vines had ever been sold for the Hartford Prolific until about three years since, when I saw, at an exhibition of the Rhode Island Horticultural Society, at Providence, a collection of grapes labelled "Steele's Seedling"—which name has sometimes been applied to the Prolific—but so unlike in quality that when I returned home I made further and more thorough inquiries of Mr. Steele. I was satisfied that in a few instances, when first brought into notice, one of the inferior seedlings had been sold for the true Hartford Prolific, not by design, but by mistake, and possibly this will account for the slowness of unbelief of some in this variety.

From some experiments which have been made I am inclined to think that this will prove valuable as a wine grape; it certainly is deserving of consideration for this purpose.

Those persons who class the Hartford Prolific with the Northern Muscadine, Charter Oak, or common Fox, are either blinded by prejudice or interest, or don't know any better; that is all.

The Boston Pear.—I suppose you have heard of the Boston Pear; those who gave five dollars apiece for these trees undoubtedly have. Well, it is nothing more than the "Pinneo," a seedling which originated in the eastern part of this State a hundred years since. I have compared the fruit and trees of the Boston and Pinneo together, and am satisfied of their identity; and so are many others here, who saw them both last September. I gave an account of the origin of the Pinneo to the editor of the *Homestead*, which he tells me he sent to you. I hear from Boston that Mr. Hovey has promised to give a statement when he procured the scions.

LONICERA ANGUSTIFOLIA.

Raised from seeds received from Captain William Munro, from the North of India.

A slender deciduous shrub, with narrow lanceolate ciliated leaves, and small pale yellow flowers, growing in pairs at the end of a slender drooping peduncle, shorter than the leaf to which it is axillary.

This plant grows about four or five feet high in any good garden soil, and is easily increased by cuttings. It flowers in April and May; and is not only a distinct, but rather neat-looking plant. Where a choice collection of hardy shrubs is grown it deserves a place.—(*Horticultural Society's Journal.*)

NEW GRAPES, ETC., IN ENGLAND.

The Muscat Hamburgh Grape.—A beautiful portrait of this great fruit appears in the last *London Florist*, with the following description: "This fine grape is a seedling, raised at Wrest Park, Bedfordshire, by Mr. Seward Snow, whose great experience and skill in the cultivation of fruits, are well known to our readers. Mr. Snow informs us that this grape originated by fertilizing flowers of the Black Hamburgh vine with those of the White Muscat of Alexandria; and that one of the seedlings from this crossing is the subject of our plate. We believe it was named the Muscat Hamburgh by the Pomological Society, which name very correctly describes its character, for it will at once be obvious to our readers, on examining the plate, that there is a great resemblance to the Hamburgh in form

of bunch and berry, as we understand there is also in its habit of growth and earliness; and that its other parent (the Muscat) has imparted that peculiar musky aroma found only in that variety, and which, hitherto, has been confined to white grapes alone. We can justly congratulate Mr. Snow in having been so fortunate as to originate so noble a grape, and one likely to prove so valuable."

We conclude the notice of this grape by extracting a description of it from a circular sent us by A. Henderson & Co., of the Edgeware Road, who, it appears, hold the English stock of it; see, also, advertisements.

"Mr. Snow has been successful in the production of a Black Hamburgh Grape, with the flavor of the Muscat, having amongst its good qualities the hardy constitution of its parent, the Black Hamburgh. It ripens, and that to the highest state of perfection, in an ordinary peach-house; it is very short-jointed, and a most abundant bearer. The bunches are large and handsome, with fine shoulders. The shape of the berry varies even in the same bunch, sometimes round like the Hamburgh, to oval, like the Muscat. The flesh is melting, and remarkably rich in flavor, fully charged with the aroma of the Muscat, and with an unusually high perfume."

The Trentham Black is another new introduction from Mr. Fleming, of Trentham, with a medium-sized bunch, and oval berry. The flavor is very rich, and vinous. It is said to be a good keeper. Mr. Duncan, of Basing Park, who has an excellent reputation, has also two new varieties, of which report speaks well.

Then there is Lady Doune's Seedling (a late black grape), producing fine bunches and oval berries, with a firm flesh, and moderately vinous; hangs well, and will probably supersede the Barbarossa.

OTHER NEW FRUITS IN ENGLAND.—"*Apples.*—Cox's Orange Pippin proved last year to be the best apple in England of the old varieties. Among new kinds, the following are among the best: Taylor's Seedling and Lord Raglan as kitchen sorts; Frogmore Nonpareil for table or kitchen.

"*Peaches.*—The Salway is a new late peach, belonging to the yellow-fleshed varieties. This sort will keep till November, and is then very rich and melting; it is a valuable kind. The Desse is another late, melting peach, hanging nearly as long as the above, and of a good size. The true Bourdine is also a very desirable late peach, ripening after the Late Admirable. The above three and the true Catherine (if it can be got) should be grown in orchard-houses, or within glass walls, when fruit fit for table might be had through November. Vineuse de Fromentin and Pucelle de Malines are two rather new middle season peaches; and the Early York and Scott's Early Red (American varieties), two early peaches, which may be added to collections as valuable. The Walburton Admirable is also an excellent late peach, and not so well known as it deserves. We have nothing to report of nectarines, further than to recommend the Hardwick and Downton, two useful hardy kinds, to those who are not growing them; also the Murray and Vermash, which are excellent varieties. The Oldenburg is a new kind, which we hope fully to prove next season.

"*Plums.*—We incline to the opinion that there is still wanting a better flavored plum than the Reine Claude, or Greengage, which has retained its superiority for centuries. The three seedling plums, Angelina Burdett, Standard of England, and Woolston Gage, raised by Mr. Dowling, of Southampton, and figured in our volume for 1853, do not prove to be any improvement on our older varieties. The Jefferson is an American Plum, latterly brought into notice; it proves to be a good kind, either for pots or out-door culture.

"*Apricots.*—There are no very new kinds of this fruit. The Kaisha is a sort worth growing. The Frogmore Seedling is also rather a new sort; the fruit

closely resembles the Moor Park, both in appearance and quality, but it ripens later than that old favorite variety.

"*Figs.*—This fruit has undergone but little change for ages. The Brown Ischia, Lee's Perpetual, and White Marseilles, still rank among the best.

"Of new *Pears*, their name is 'Legion;' the difficulty is to select those which are improvements. Climate, season, soil, and mode of training, affect the size and quality of pears very much. Matthews' Eliza is a new seedling. The following have proved good this last season: Poire Pêche is an excellent kind, ripening in September; Brudnell's Seedling is an early pear, ripening about the same time as the preceding; it is of rich, sugary quality, but soon decays when ripe; the Bergamot Seckel is a hardy variety, possessing the qualities of the Seckel with the advantage of larger size; Sabine d'Hiver promises to be one of the best new late pears; Seaton Seedling is a small November Pear, of excellent quality; Conseiller de la Cour and Triomphe de Jodoigne, are two large, handsome continental sorts, of recent introduction, and are of first-rate quality; Beurré Clairgeau and Hitton's Seedling are large and showy pears."

WATSONIA IRIDIFOLIA—VAR. FULGENS.*

Irideæ.

FROM THE FLORE DES SERRES.

If the great number of floral colors was not an acknowledged fact among many of the Irideæs, the plant here represented could hardly be considered a simple variety of Gladiolus iridifolius of Jacquin. Although the type of this tribe appears pale and dull, with flowers of a grayish-blue, still, the plant before us is adorned with such rich vermilion orange, that it well deserves the epithet of *fulgens*.

All the Watsonias are originally from the Cape of Good Hope. They have often been confounded with the genus Gladiolus, from which they only differ by slight shades, such as greater regularity in the form of the perianth, and particularly the cleft stigmas, with uniform divisions, instead of being simple and spread. Two of the prettiest species are the Watsonia meriana and the Watsonia aletroides, both of a bright rose color. The Watsonia iridifolia surpasses them in size, and rivals them in beauty; it somewhat resembles sword grass. Its stem, furnished towards the base with from four to seven ensiform leaves, rises a compact shaft, of three or six feet in height. The shaft greatly exceeds the leaves; it is often simple, but sometimes divided in vigorous specimens. The flowers are wanting in fragrance. The flowering begins in September, and continues more than a month. This beautiful species is too rare in collections.

Culture.—Let amateurs ignore the innumerable amount of forms and varied color which the flowers of the bulbs of the Cape and similar countries offer! How many persons attached for many years to certain kinds of culture, wearied with forms well known to them, are delighted at the sight of these Amaryllidaceæ, Liliaceæ, Iridaceæ, which they enjoy for the first time! Why is it they are so opposed to common things? Who has not cultivated Crocuses, this little, welcome flower of the spring? Well, the generality of bulbs scarcely offer any more difficulty in the culture, with only this simple difference: that the bulbs from the Cape need the protection of glass from continued rain and snow! And as to the frost, the shutters above the glass protect them from that, with the help of a little manure during the coldest weather.

* See Frontispiece.

To amateurs who would wish to try the culture of the Cape of Good Hope bulbs, we will say: A hollowed square flat, of about a foot in depth, formed of two tiers of common, and one of fresh earth, furnished below with a thick bed of rubbish, of pebbles, etc., in order to facilitate the running away of water, is encircled with a box, which is surrounded with old straw or tan, to prevent the frost from penetrating it. At the beginning of October, you plant the bulbs firmly, according to the relative height of the plants, from three, four, to five inches in depth. Rest the frames on the box, and during the winter keep out dampness, giving them air whenever the temperature will allow it, and cover them up with manure or straw when there is a threatening of frost. By the first days of spring, all the bulbs (of which many have started in winter) are in full vegetation. At this period, air it extensively if you can, but cover it up when the rain comes. At last, the frost entirely gone, you can carry away the box, and in this way the flat square makes the ordinary garden soil, with a very pleasing effect.

After the flowering, if it is not wanted to go to seed, cut off the useless peduncle, and, consequently, the withered flowers; set the bulb upright, and separate the sprouts from it, and keep both of them in a very dry place, to replant them, as we have said, in the month of October.

The seed plot is made in the autumn or spring, in a well drained spot, with compost of sifted earth. The second year, the plant can be settled, and the greater part of the young plants will begin to flourish from this time. The sprouts may be treated precisely as the parent.

THE ILLUSTRATIONS OF THE OLD FRUIT-BOOK.

WE have more than once alluded to the quaint old book of Lawson, which has been successfully reprinted at the publication office of this work, and is now in the hands of many of our readers. But as some may not have had access to the cuts, we copy a few to give piquancy to our pages. It must be remembered that the work bears date 1626. At page 28, the author says:—

"And needful is a stoole on the top of a ladder, of eight or more rounds, with two backe feet, whereupon you may safely and easefully stand to graffe, to dresse, and to gather fruit, thus formed. The feet may be fast wedged in, but the ladder must hang loose, with two bands of iron."

This is quite a comfortable stool, though it does look a little *shaky!*

Grafting.—"To be short in this point, cut your graft, in any sort or fashion, two inches long, and ioyne him cleanly and close to any other sprig of any tree in the latter end of time of grafting, when sap is somewhat rife, and in all probabilitie they will close and thriue: thus:

The Sprig. The Graft. The Twig. The Graft.

or any other fashion you thinke good."

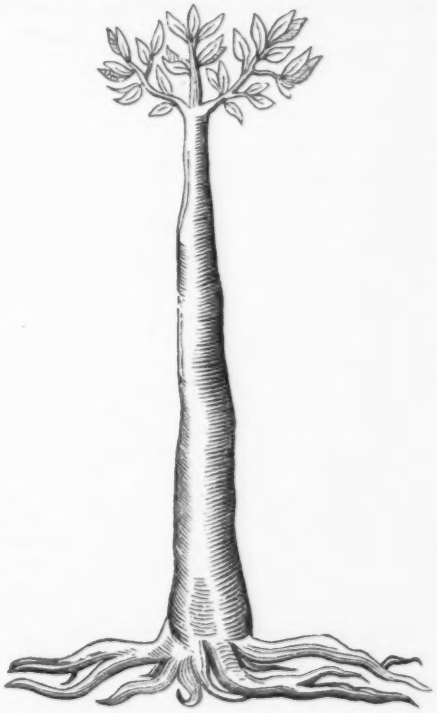
"Inoculating is an eye or bud, taken barke and all from one tree, and placed in the roome of another eye or bud of another, cut both of one compasse, and there bound. This must be done in summer, when the sap is proud.

"Much like unto this is that they call grafting in the scutchion. They differ thus: That here you must take an eye with his leafe, or (in mine opinion) a bud with his leaues, and place them on another tree, in a plaine (for so they teach). The place or barke where you must set it, must be thus cut with a sharpe knife, and the barke raised with a wedge, and then the eye or bud put in, and so bound up. I cannot denie but such may grow. And your bud, if he take, will flowre and beare fruit that yeere: as some grafts and sets also, being set for bloomes. If these two kindes thriue, they reforme but a spray, and an undergrowth. Thus you may place Roses on Thornes, and Cherries on Apples. Many write much more of grafting, but to small purpose."

Your under-gardeners must labor to keep down weeds, "with a skrapple of iron thus

formed, for netties and ground-ivy after a showre."

Trimming is illustrated in the fashion of the adjoining cut, which might be given as the style in vogue with the city trimmers, to make a long pole, but little shade. This mode is recommended to make good *timber*. The author says:—



Imagine the root to be spred farre wider.

"How many Forests and Woods, wherein you shall haue for one liuely thriuing tree, foure (nay sometimes twenty foure) euill thriuing, rotten and dying trees, euen while they liue? And in stead of trees thousands of bushes and shrubbes. What rottennesse? what hollownesse? what dead armes? withered tops? curtalled trunkes? what loads of mosses? drouping boughes? and dying branches shall you see euery where? And those that like in this sort are in a manner all unprofitable boughes, cankered armes, crooked, little and short boales: what an infinite number of bushes, shrubs, and skrogs of hazels, thornes, and other profitable wood, which might be brought by dressing to become great and goodly Trees. Consider now the cause: The lesser wood hath beene spoiled with carelesse, vnskilfull, and vntimely stowing, and much also of the great wood. The

greater Trees at the first rising haue filled and ouer-loaden themselues with a number of wastfull boughes and suckers, which haue not only drawne the sappe from the boale, but also haue made it knottie, and themselues and the boale mossie for want of dressing, whereas if in the prime of growth they had beene taken away close, all but one top (according to this patterne) and cleane by the bulke, the strength of all the Sap should haue gone to the bulke, and so he would haue recouered and couered his knots, and haue put forth a faire, long and streight body (as you see) for timber profitable, huge great of bulke, and of infinite last.

"If all timber Trees were such (will some say) how should we haue crooked wood for wheeles, coorbs, &c.

"Answ. Dresse all you can, and there will be enough crooked for those vses.

"More than this, in most places, they grow so thicke, that neither themselues, nor earth, nor any thing vnder or neere them can thriue, nor sunne, nor raine, nor aire can doe them, nor any thing neere or vnder them any profit or comfort."

THE PATENT OFFICE.—AGRICULTURAL DEPARTMENT.

BY AGRICOLA.

It is well known that, for some years past, efforts have been made by prominent agriculturists in various sections of the Union, and especially by the United States Agricultural Society, which holds its annual convention at Washington, to direct attention to the utility of a National Agricultural Department—its head a cabinet officer, with power and position co-ordinate with the other Secretaries. There is, it must be admitted, some propriety in the scheme, inasmuch as the rural interest is supreme, and the tillers of the soil greater in number and wealth than all others combined; hence it could be only necessary for them to unite on the measure to carry it into effective operation. Why, then, it may be asked, is it not accomplished? Perhaps a sufficient answer may be found in the fact, there is fear—well founded fear—lest it get into the hands of politicians. Its head not selected because of his fitness for the post, but in recompense for services on the stump; not in extracting stumps, for to that extent his claim might be legitimate, and his aids appointed through favoritism and personal friendship, without regard to their capacity. Such has unhappily been the result of many a well intentioned effort; and if the Agricultural Department were established, it would be a miracle, indeed, did it escape. I had read of the agricultural division of the Patent Office, and, when last in Washington, strolled towards the structure which bears that name—a noble pile of marble, its *façade* equal to one of our city squares, its Grecian portico almost rivalling the Parthenon. I rejoiced that American inventors were so much honored in the edifice; they have done, and are doing, their share towards the civilization and refinement of all mankind; and the arts of peace have been more potent to elevate American character abroad than the triumphs of war. McCormick has surpassed Scott, and that is no slight praise. But I am digressing. I was about to lead you, Mr. Editor, to the agricultural division of the Patent Office. Where, sir, do you imagine I found the department which represented at Washington our country's leading interest? Shall I write it down? In a dingy, dismal corner of the rear basement, with just light enough to make the gloom more gloomy—the official a clerk unknown to agriculture, but not "unknown to fame."

When the "agricultural division," as it is called, was made (one hardly knows how, for it would seem to have sprung into existence self-created), and a person

was appointed, charged with the duty of procuring and distributing seeds, a favorable opportunity presented to test the practical working of an inchoate scheme. The appropriations made by Congress were ample, and met with scarcely a dissentient voice. But, alas! how are the best intentions made abortive by an erroneous step!—a false move at chess endangers the game—and the appointment of an incompetent person to procure seeds, has frustrated the well-intentioned efforts of the friends of agriculture. It may be said that an official duly qualified for the post, is not readily obtained. True, there are difficulties in the way. The incumbent should be one practically acquainted with agriculture in its various subdivisions. He should be possessed of some botanical knowledge; have at least a smattering of chemistry as applied to agriculture; not ignorant of the products of other lands, especially with reference to the numerous plants which, either simply or combined, are used in manufactures, the arts, and sciences. Such knowledge would qualify him to judge of the probable advantage of their introduction to our country, and his investigations would enable him to point out the latitude and character of the soil in which success was probable, together with the mode of culture which experience had determined as the best.

Mr. Editor, here is a wide field with "ample room and verge enough," and had a clerk of proper qualifications been selected, much might have been accomplished; the harvest was indeed plentiful, and the means to meet expenses ample. We should not then have seen seeds from warm latitudes distributed in the North, and English grain and esculent vegetable seeds, of varieties familiar to every kitchen garden in our country, scattered broadcast, *whilst the same identical sorts, of American growth, were being exported to the British possessions, more esteemed there than those obtained from England!* Hyacinth roots, such as are sold at auction in every seaport, and nearly every city in the Union, would not then have been imported, packed in tin cases, and dispatched by the mails, as an exploit worthy of the Patent Office! We should not then have seen tens of thousands of dollars expended in the wretched compilation known as the "Agricultural Report of Patent Office," which no man well informed in rural affairs would venture to send abroad, so shamefully does it misrepresent the actual agricultural condition and intelligence of our country. Verily, we are a patient people, to be content to "pay the piper" for such execrable music. Mr. Editor, has not our faithful sentinel, the *Horticulturist*, a word to say on this unvarnished exposé, and shameless perversion of the public funds? AGRICOLA.

[Beyond all question, the subject should be investigated. A letter writer from Washington asserts that all the common garden seeds planted for ten miles round that capital, are procured from the Patent Office gratuitously, and that, in many instances, poultry is fattened on corn and wheat obtained in like manner. We have ourselves seen boxes and bags of seeds going a begging from the same source, and to get rid of the stuff sent in kindness by Washington habitues, in over abundance, it has been fed to pleasure horses! But what shall we think of long scarlet raddish seed, early York cabbage, and mignonette! to say nothing of turnip seeds *imported*, though originating here, and given away in over-doses to all who know the secret of the public *crib*-bing. It is surely a misapplication of the appropriation, and needs reform. What a melancholy thing it is to find the best intentioned schemes fail from incompetent management. We were about to take notice of some errors in the last *Report* which would indeed make us ashamed to meet it abroad, when this communication came to hand, and we must wait. Our correspondent might well have made some remarks on the injustice of gratuitously distributing English seeds, such as our own people are engaged in producing with great success.—ED. H.]

A TRIP TO CUBA AND THE SOUTHERN STATES, NO. 11. CONCLUSION.

TIME began to be valuable, and leaving the hospitalities of Natchez, we descended the Mississippi, to join the remnant of our large party, and make our way homewards. The Princess, with another and an agreeable set of people, returned us safely, after an absence of a week.

New Orleans has been well described as a vast cotton fair, attended by representatives from all the cotton-consuming world during winter, and abandoned to the few residents who remain in summer. As most who come here to make money leave it as soon as they have accomplished their ends, there is too little public spirit, and few improvements that demand concert of action, or which are not absolute necessities, can be carried through. Its commerce is immense. The prophecies of its declension *may* prove true, but none who ascend its river from the Delta, passing another and another fine ship in constant succession, or who view the shipping along its wharves receiving their vast cargoes, can believe in its sudden decline. Railroads may, and do, divert the produce from certain former tributaries, but new land is every day broken up, and bales of cotton every year come to hand from some newly cultivated district; railroads may exercise a great influence in preventing the enormous increase of the city once anticipated, but its growth is still certain.

The French part of the town presents some curious differences from our stereotyped mode of building cities; a foreign air pervades it, but it is without interest after the first survey. The dead level of the site diminishes its beauty, and all picturesqueness is destroyed. Bad smells are not as prevalent as might be expected, the water of the river being let in to wash the gutters daily; mosquitoes in April, however, prove a great annoyance to us who scarcely ever have them at home, even in the warmest season.

We found Mobile in a complete turmoil with a parade of the firemen; and after a hospitable day with the celebrated and scientific Dr. Nott, took the new steamboat St. Nicholas for Montgomery, Alabama—the head of navigation, where the travel joins the system of Georgia railroads. Our boat was furnished with a machine called a "Calliope," to make music by steam! It was "performed" by a negro at the principal stopping places, and became a serious nuisance with its harsh and most discordant notes. Strange to say, it was, however, a most popular piece of grinding; for, generally, we found ladies and gentlemen waiting for a tune, and the negroes assembled, with their ebony skins and white teeth fully exposed.

We had a North Carolina giant on board—a huge, ungainly fellow—who was anxious to "employ" somebody to exhibit him, but was unsuccessful in finding a Barnum.

The Alabama, though so useful a river, is a very uninteresting one; it is a river of the fourth class. Till it descends into the rich bottoms of the Gulf of Mexico, it flows through the hilly region of the State, and is navigable only at high water. The valleys are clothed with a dense and luxuriant vegetation, to which the giant creepers and the palmetto give a semitropical character. The constant appearance of the Spanish moss, with its long, gray, shaggy, withered-looking growth,

gives a melancholy deadness to the scene, as you thread your way through the stream, winding and turning sufficiently to more than double the distance you wish to conquer. The forest descends to the banks of the river, and it is no uncommon thing for the overhanging branches to brush the deck of the steamer. In one or two instances, the limbs took hold of the bell, and rang a loud peal. The boat rarely stops; when it does, it pokes its nose into a high bank; boxes, bags of corn, and a few barrels of pork, are rolled out into the sand or mud, as it happens to be dry or wet, the owner, with his gang of negroes, taking them up the hill with difficulty, and at his leisure. Sand banks form between the different voyages; a skeleton of a steamboat may now and then be seen left upon one of these.

The ascent of the river presents the most melancholy scene. Life, there is almost none, if we except the vegetation. Once in a day you may pass a steamboat, but as to other navigation or sailing, pleasure parties, or even a ferry-boat of any importance, all is silent; the few settlements on high bluffs present nothing attractive, and look like melancholy storehouses. The inhabitants reside back from the river, where it is more healthy; scarcely a habitation presented itself for three hundred miles. These sylvan solitudes are interspersed with swamps; these are traversed by channels cutting the inhabitants off from each other, and the whole appearance of things is that of solitude brooding over unhealthy nature; dampness pervades the lowlands, and it is curious to see the puny efforts of man trying to reclaim here and there a little cotton land—all this in a country which has been called settled for half a century.

As we ascend, our Calliope startles the woods; we approach a landing, to take in wood; scows are ready loaded, the engine stops till these are fastened on each side, and, as we proceed up stream, the fuel is hastily piled upon our lower deck, the empty scows are let go, and they return with the current to their former moorings, to load for the next customer. If the landing is at a farm-house or a store, all the big and little negroes, with a few white children, range themselves on the heights above us, and dance to our half-savage music, the notes of which are about as discordant as those of a sledge-hammer. As we stop at some of the high bluffs, there are long steps of wood descending to our level, and occasionally a sort of railway, worked by a horse on the hill, pulls up or lets down the solitary individual who descends to see if there is any pork or corn to his address. We saw no mails or newspapers go ashore; these are conveyed in stages, &c. The railroad from Mobile to Montgomery is slowly creeping along, and, when completed, will convey passengers in one day, instead of three or four.

The skill required to navigate a river such as this, must be very great. In the dark nights it must be almost impossible; if a low stage of water is added, it seems utterly impracticable. We were assured there was plenty of water by all parties, but, before reaching Montgomery, apprehensions were entertained that we might get aground. These apprehensions were not without cause, for we touched bottom often, and long poles were in the hands of the men, to *lift* us over. A fair rate of speed is kept up, even in the thick darkness, and were it not for the indifference to danger manifested by the habitués and the hands of the boat, a Northern traveller would feel alarm.

As soon as dinner or tea is over, all the passengers group themselves on the sides of the boat to smoke or chat. The big and little negroes assemble to dance, or lie about and play some simple game of cards.

The scene is so monotonous, that a good sleeper has the advantage over the wakeful, who, if nothing better offers, looks on at the game of cards, played, to all appearance without money, the laws of Alabama being extremely stringent

on this subject. Every player is at the mercy of any informer, and the rules of the boat, unlike those on the Mississippi, do not allow of any gambling.

Bales of hay and sacks of corn, with now and then a box of claret, or barrels of pork or salt, were delivered here and there, and once a child's bathing-tub went ashore with a gentleman, who was met by his servant, to carry his coat, and the light tub was left to be sent for.

Sometimes a reach of peculiar colored wall of mud was seen rising fifteen feet from the water, as regularly formed as if made by art, and both ends well defined, having the precise appearance of the walls of a garden; and the garden itself was well represented by shrubs and trees, intermingled with the wild azalea, in white and red festoons. The cottonwood was the prevailing tree; the dogwood in blossom; the long-leafed pine and the pecan occasionally enlivened the solitary scene. As we approached Montgomery, the buckeye became common. The weather was bleak and chilly (April 12), though all the trees were in full leaf. Montgomery is a fine Southern town, but it was too wet for much exploration, and, on the 13th, we started for Atlanta, Georgia, through glorious hedges of the Cherokee Rose, in bloom, trees in leaf, &c. Before night there was no green thing to be seen; we were on the higher grounds, and we saw no vegetation till we reached Augusta, a short stay on a Georgia plantation being our only experience of Georgia life.

Augusta has great merits as a winter residence, but our limits are reached, and we do not deem a railroad tour to Philadelphia of sufficient interest to record. We reached home on the 19th of April, and encountered the rigors of a Northern winter for some time thereafter.

NATURE'S GREATNESS IN SMALL THINGS.

FROM HOUSEHOLD WORDS.

To the imagination of man, magnitude presents itself as one of the noblest and most impressive attributes with which material objects are clothed. The colossal grandeur of the Alps, amid the wonders of nature, or of the Pyramids among the master-pieces of art, affects the sensuous nature of the beholder with unmingled reverence and awe. But the refined intelligence seeks for a higher standard of value than size can afford. Sense bows before the majesty of sublime proportion; reason first seeks to investigate all the relations of material things, and, in the end, exalts to the highest place those which a searching test has declared to possess the loftiest significance. Not unfrequently it is seen that forms the most minute are most essential. They were the Titanic forces and grander features of nature which evoked the admiration and the worship of the earliest tribes of men. As we descend along the stream of time, we may discover a growing perception of the greatness of small things; the marvellous power of minor organisms to work immeasurable changes, and the exquisite beauty of minute structures.

Many centuries ago, thoughtful men foreshadowed the full expression of this ripening truth, and anticipated the results of modern science in a profound axiom —tota natura in minimis—in smallest things is nature greatest. It was reserved for this century to develop a saying of the schools into a household precept. This age has cast down barriers that walled round the human vision, and has spread out before us a whole universe of created things, of which no man knew before our time. We see now, by the aid of the microscope, that greatness has no existence but as composed of infinite littleness. Who that bowed before the oak could have thought the lord of the forest to be a compound mass of many millions of

independent organisms, of which thousands are combined within an acorn? Who that looked upon the mountain chains of Western Asia, or the white cliffs of Dover, could surmise that they were the handiwork of infusorial animalcules, whose shells make up the mass in numbers of thirty millions to a cubic inch? These are the revelations of the microscope.

Gifted with this new power, the naturalist has traversed the material universe as though armed with a magician's wand; and beneath all diverse shapes, amid all various structures, he has found one simple and invariable unit, the beginning of all form; the first and main element of attenuated organisms. It is the organic cell. The loftiest trees have bowed their heads, and confessed this strange secret of their structure.* The stubborn rock has not withheld the same tale of antediluvian lore. The highest animal and the lowest plant have narrated the self-imprinted story of their birth. Flowers have whispered it—the rustling leaves have breathed it. The butterfly has borne it on the dust of its wings, the fish upon its scales. It is written in the blood that circulates in our veins—it is imprinted on the muscle which gives motion, and the bones which afford support to our frame. All nature testifies to it. One secret that is the key of all shapely beauty or deformed ugliness—a hidden unity amidst all variety—a common type for every form. One word which all creation perpetually utters; a witness to the one source whence all derives.

The waters teem with dissimilar forms of life. The air is darkened with inhabitants, not one of which has its exact counterpart. The mind actually shrinks from the contemplation of endless dissimilarity, and apparently inharmonious difference. What a chasm gapes between the shape and function of the stately old chestnut-tree of Etna, whom time has not subdued and age has not withered, and the ephemeral fungus that springs up to-day, flowers to-morrow, and dies ere another sun has visited it! A wider interval appears between the noble form of man himself and the green mould that clothes his tomb. But the microscope resolves this complexity, and bridges easily this chasm. It resolves them alive into simplest elements, and finds beneath all the same type of creation. It shows always, at the foundation, that common origin in cell-growth which binds all created things in one sublime connection; and proclaims a common law of growth, and a pervading fiat of creative power as vice-regent over organic nature.

It was our own distinguished countryman, Robert Brown, who initiated the observations whose fruitful results have led to the perception of this universal law. But not until the researches of Schleiden, in 1837, was any useful generalization obtained. The efforts of naturalists had, before that time, been chiefly directed towards the perception of differences and the creation of species. But Schleiden saw that the philosophy of nature was darkened by our ignorance of the laws of natural development; and bravely devoting himself to the patient study of growth, and the laws which control it, he travelled through a tangled forest of prickly and entwined facts, till at last he saw the light, and could proclaim it. He watched the secret processes of plants, traced them in their reproduction and their birth, analyzed their structures, and observed the process of their functional activities.

At the end of a long course of labor, he was able to tell the world that, as the minor organisms, which are the lowliest members of the vegetable kingdom, are each in themselves an individual cell, having life and activity, nutrition and reproduction, so the highest plants are only congeries of such individuals, heaped one upon another, moulded into a thousand shapes, and adapted to different purposes. It was then that he enunciated the principle that the life-story of a plant is to be

* See *Household Words*, Volume the Eighth, pages 354 and 483.

studied through the vital history of its composing cell-elements; and, proclaiming the microscopic vegetable cell as the unit of vegetable creation, exalted it to the place of honor among the objects of microscopic research. It was no small thing that this key to the cabinet of vegetable physiology should be so discovered, and placed in our hands; but his researches led to yet another result—for Schwann proceeded to apply to the animal world the same method of inquiry which Schleiden had inaugurated among plants; and, at the close of two years, he made known, in his turn, the sublime truth that the law of formation and reproduction which prevails in the vegetable rules also over the animal creation. He showed that the scheme is the same, and the cells still the primordial element of being. Bones, cartilages, muscles, nerves, and every tissue were traced to their origin in cell-growth. Man himself appears as a congeries of cells; his growth the expression of the sum of their growth; the vital processes of his body carried on by cell-action; secretion, absorption, exhalation, nutrition, chemical change, and vital change; so many names which only indicate phases in the history of cell-life, that epitome of all organic life. These splendid researches were the result of observations made with very imperfect and inoffensive instruments; they should encourage the poorest and simplest student of microscopic nature to think and to examine for himself. They should inspire an abiding faith in the noble simplicity of the innermost mysteries of nature, and the power of the human intellect to master the difficulties of all mere material problems in the exercise of its heaven-descended reason. Greatly should the microscopist rejoice to find in his favorite instrument a facile power of unveiling these high secrets. The most inexpensive microscope gives him the power to interrogate all surrounding objects on this head, and to draw from them the confession of their obedience to cell-power. Sitting in the poorest room, even on the dullest day, he may cut a chip from the floor, take a leaf from a flower, a thread from the carpet, a hair from the chair, a fragment from his food, a coal-chip from the fire, or a drop of blood from the finger, and they will all speak to him in this same language. Their variety will show up a higher uniformity, their complexity a simple cellular unit. Their multiform shapes will betray one common type. Uttering many voices, they sing one grace and canticle of the same purport; the vastness and variety of the results produced by modifications of the same unvarying means; the universality of cell-power; the pervading existence of cell-growth, the million development of its resources, its shapes, its functions, its labors, and its value.

This high law of unity stretches yet further. It has other applications, and has found other as illustrious exponents. While Schleiden and Schwann were working humbly in their vocation amid the mysteries of structure in far parts of Germany, our own countryman, Owen, was studying the law of form here in the heart of London. The one was busied with his microscope and his needles, searching into the tissues of plants, questioning their stem, their fibres, and their pollen; the other, arranging ill-smelling bones, dissecting neglected carcasses of wasted creatures, scorning nothing that once had life, and still possessed organization—making light of labor when it promised a new fact, or a fresh illustration—looking for order amidst confusion—waiting for light in the darkness. At either end of the web, patient workers were unravelling the plaited thread of science; each followed a widely separate clue, but in the end, as they held fast to the right, their paths have met, and they stand, centrally amidst the toiling, scattered crowd of scientific laborers, the apostles of a great truth.

What Schleiden had done for structural anatomy, Owen did for the anatomy of form. The man, the bird, the reptile, and the fish, the uncouth saurian, and the strange griffin of pre-Adamite times, seemed to be separated by as wide an interval

as any that distinguished the structure of the lichen from that of the palm-tree. But, the secret once fathomed, and the type established, their visible connection is read off from them as from Nature's own primer. Owen has demonstrated, to the satisfaction of the world, that, by changes of one form alone, the archetypal vertebra, all world-wide varieties have been effected. This is the key of the mammoth frame—it is the secret of the shape of the fishy tribe. Those are expanded vertebræ which inclose the brain of man; they are vertebral appendages which wall round his heart—which afford levers of action for the arms—which supply bases of support, and cavities of protection for the organs of motion and sense, so multiform and variously endowed. The paddle of the seal, the wing of the bird, and the fin of the fish are new forms of the same element. Thus it is, that truth harmonizes with truth, and law combines with law.

This grand demonstration of unity in creation is a new bulwark to religion. The proofs of design have long been a potent weapon of defence, and an earnest source of delight in the hands of rational and religious men. But there were many things in nature which it failed to explain. What of intelligent and economic design could be traced in the half dozen bones hidden beneath the skin of the seal's flapper? Those joints were useless, and those pieces unavailing. A solid, single-hinged mass was apparently far more to the purpose than this difficult complexity of unused joints. We begin now to see that the apparent anomalies bear reference to economy of type, and not of instrument. They wear the livery of archetypal servitude, they are the servants of a double wisdom.

Thus, beyond and above the law of design in creation, stands the law of unity of type, and unity of structure. No function so various, no labor so rude, so elaborate, so dissimilar, but this cell can build up the instrument, and this model prescribes the limits of its shape. Through all creation, the microscope detects the handwriting of oneness of power and of ordinance. It has become the instrument of a new revelation in science, and speaks clearly to the soul as to the mind of man.

THE DELAWARE GRAPE.—IS IT THE TRAMINER?

BY A. THOMSON, DELAWARE, OHIO.

When the grape now known as the *Delaware* was first brought to the notice of horticulturists (some ten or twelve years since), it was supposed, from what could be learned of its history, that it was a foreign variety; and with the view of having its identity fixed, specimens of the fruit were sent to a number of gentlemen in various sections of the country, regarded as authority in such matters, including the veteran pomologist of Cincinnati, Mr. Nicholas Longworth. Mr. L. did not, from his own personal knowledge, express an opinion as to *what* it was, or whether native or foreign; but some German vine-dressers in his employ declared it to be the *Traminer*, a celebrated wine grape of the Rhine. Others were equally positive that it was the *Red Resling*, also a well known German grape of high repute; but the weight of testimony favoring the Traminer side of the question, the decision that it was that variety was formally announced, and generally acquiesced in, though the only proof of its being correctly named was that afforded by the resemblance the fruit was thought to bear to some recollected to have been seen and tasted years before

in "Faderland," by the Teutonic laborers referred to, and they, too, *were divided in opinion* as to what it really was. Unsatisfactory as such evidence might seem, it was, at the time, in the absence of anything to the contrary, regarded as conclusive, and the grape accordingly went forth as the veritable Traminer, and as such found its way into at least two fruit books, with "Delaware" and numerous European cognomens appended as synonymes; and orders for the Delaware, in some instances, were filled by sending out the Traminer, much to the injury of the reputation of the genuine article. Having had considerable experience with foreign vines, and finding them uniformly tender, very subject to mildew, and entirely unsuited to our soil and climate, and several years' experience showing the Delaware to be directly the reverse of all this, I began to doubt the correctness of the decision above noted, and this doubt was increased on hearing of several instances in which efforts to grow the Traminer (received for the Delaware) had signally failed. I therefore determined to investigate the matter further, and with that view again sent specimens of the fruit to numerous distinguished horticulturists who had not before seen it, none of whom recognized it as any variety with which they were acquainted, and a number of them declared most positively, from their own knowledge, that it was neither the Traminer nor Red Resling. About the same time, I embraced the opportunity afforded by a visit to the Atlantic States to call at several extensive commercial gardens, at two of which I found the Traminer growing, and at one of them a vine of the Delaware, also, which I had furnished myself. An intelligent young German in attendance assured me he was perfectly familiar with the Traminer previous to emigrating to this country, and that there was no doubt about the vines there shown me as that variety being true to name; and he agreed with me that it bore no resemblance to the Delaware in wood or foliage. Since that time, the vines have been very generally disseminated. The fruit has been seen and tasted by the best judges the country affords, including many intelligent foreigners, and while none hesitate to bear testimony to its excellence, I know of no instance in which any one has claimed to recognize it as the Traminer or any other known variety. In saying emphatically it *is not the Traminer*, I am fully sustained by Dr. Warder, and all other Cincinnati horticulturists whom I have heard express an opinion on the subject within the last five years; and I do not think it can be shown that Mr. Longworth has at any time positively asserted it is that variety, or even intimated that it was, except upon the strength of the opinion advanced by his vine dressers. Indeed, in letters received from him within the past few weeks, he does not claim that he knows what it is, but admits directly the reverse, and expresses a desire for facts by which to remove his doubts as to whether it is a native or foreigner.

These remarks are elicited by observing that the editor of a journal issued in your vicinity—himself an avowed admirer of the fruit—asserts, in a late number of his paper, that in the brief communication from Mr. Longworth on the subject of the Delaware Grape, in the February number of the *Horticulturist*, that gentleman has *condemned* the Delaware, and says "it is the Traminer." With all due deference, I respectfully submit that Mr. Longworth, in that article, *does not* either "condemn" the Delaware, or say "it is" the Traminer. The readers of your journal have access to the article, and are quite competent to judge for themselves. I leave them to decide whether or not I am right.

It is an easy thing to assert that a fruit is or is not a certain variety; but, to *intelligent* horticulturists, it would be far more satisfactory to have it proven, and as a few years are sufficient to place the matter beyond doubt (and in this case *no* evidence has been adduced to establish the Traminer theory, though at least ten years have elapsed since it was first promulgated, on exceedingly doubtful

authority), I think it is high time it were abandoned. It is very desirable to have all errors in nomenclature corrected, and I suggest to gentlemen (if any such there be) who are dissatisfied with the present designation, that they push their explorations into some *new* channel, and if they succeed in developing anything new or desirable in reference to it, no one will rejoice at their success more than myself. I repeat, however, that the claim that it is the Traminer—so long persisted in, on such shallow foundation—should be urged no further.

But if not the Traminer, what is it? This question I cannot answer. The facts connected with its early history would warrant the inference that it is a foreign variety, but all experience tends to upset that theory. My own decided opinion is, that it is an accidental seedling, originating in a garden where foreign vines were growing, and possibly of foreign parentage; and the latest and most reliable information I have been able to obtain, favors the conclusion that when the original vine was brought to this country, it was probably the only one of its kind then in existence. What it is, however, is of comparatively little consequence. The important questions are, is it a superior fruit? is it hardy? productive? suited to our soil and climate? To the first question, no judge of fruit who has had an opportunity of tasting it will hesitate to respond in the affirmative; for, in quality, it is universally conceded that, among hardy grapes, it has but a single peer, and no superior. That it may safely be called productive, is remarkably exempt from every species of mildew or blight, and is perfectly at home in our gardens, will, I fancy, be admitted by all who are familiar with it; and though somewhat difficult to get under way, and not by any means as rampant a grower as some of our natives, when most thoroughly established, with kindly treatment (and no vine manifests more readily than this its appreciation of generous nourishment), I think the most skeptical will become satisfied that delicacy of habit and feebleness of growth are not inherent or chronic defects, but, on the contrary, its normal condition is that of a robust, healthy, and vigorous vine.

[Mr. Thomson has done good service in the above communication, and we propose that all interested should merely wait till the Delaware ripens again. Traminer or not, they will all want it; but it has now too many spectators looking on to allow the subject to remain in doubt, for which, indeed, we have already stated there is, in the opinion of those well informed, *no question*.—Ed. H.]

ENGLISH STRAWBERRIES.

BY JOHN SAUL, WASHINGTON, D. C.

At page 72 of current volume are some very interesting notes upon the fruits of 1857, by Mr. W. C. Strong. He says: "That any English variety is desirable for our climate, is a question yet to be proved." However applicable this opinion may be to Massachusetts, it will not hold good in the District of Columbia.

Mr. John Slater, of Alexandria, Va., an intelligent and experienced market gardener, cultivates, and has cultivated for years, *none* but English strawberries, to which he has, this season, added one French variety. To use his own words: "I have kicked every other sort out of my garden;" and bear in mind, this was not without first testing them. "They were found wanting," and then discarded. He tests every native or foreign sort of promise; now what is the result? Any person interested in the matter can have ocular demonstrations in our market during the season of this fruit. His crops are not only abundant, but the fruit is of the largest size and highest flavor, in which these varieties are known to excel. When

other growers, with their little, scarlet sorts, get from six to twelve cents per quart for strawberries, Mr. S. can easily command from twenty-five to fifty cents, and, on their first appearance, a dollar. The varieties are Alice Maud, for a first crop, followed by Victoria and Kitley's Goliath; to these he has now added "Vicomtesse Hericart de Thury!"

Mr. W. Cammack, another horticulturist of long standing, cultivates principally English varieties. I say "principally," for he grows one (and I believe only one) native variety—Hovey's Seedling; the other sorts the same as Mr. S.; and he is equally renowned for his magnificent crops.

Mr. John Howlett, an excellent florist and gardener, cultivates English strawberries exclusively. To him is due the introduction and first successful culture of Kitley's Goliath in this neighborhood. From a small bed, a few feet square, he sold $84 worth of strawberries—none for less than fifty cents per quart. Another great advantage of these strawberries is, that from their large size, they can be picked so quickly, and a few will fill the measure. All strawberries do not sell so high in our markets; any quantity of small, acid, scarlet strawberries are disposed of at prices ranging from six to twelve cents per quart.

As a proof of the estimation in which these varieties are held, another market gardener has about two acres of Kitley's Goliath, with others in like proportion.

The question will be naturally asked: How come those varieties to succeed to such perfection with the gardeners here named, whilst they have so signally failed in the hands of others in the vicinity? I answer, good culture. These men know the value of deep trenching, high manuring, and good after care, such as keeping them perfectly clear from grass and weeds through the summer, and the ground loose and broken. Persons not disposed to give such culture, but to depend upon the plough, and, in case of failure of a strawberry crop, to take off a crop of hay or clover, had better, by all means, stick to their scarlets; they are far more satisfactory. By "scarlets" I mean nearly all our native varieties, as few—very few—possess the least trace of a Pine, not excepting the best of American strawberries, Hovey's Seedling. This must be apparent to any person conversant with the original types of our now cultivated strawberries.

I am fully aware that many English varieties are not suited to our climate; others are disposed to burn. The nearer to perfection that a fruit reaches, the greater care and higher culture it requires; it is so with all garden vegetables, with florists' flowers and plants. Neglect the dahlia, rose, hollyhock, or pansy; how soon do the flowers of the three first become single and poor, and the last diminutive in size. Our finest cattle demand the greatest care. Apples are attacked by borers; pears are subject to blight; peaches gum; plums, apricots, and nectarines, are injured by curculios; grapes mildew; corn "fires;" wheat has smut; and our potatoes rot; yet persons are found to cultivate one and all of them.

VARIETIES.

Carrying Bees to the Moors.—An apiarian, in Scotland, has given in the *Cottage Gardener* a narrative of his journey, in carrying four hives of bees to the moors. The first place they made application for liberty to leave them with a cottager, was denied, on the plea that they robbed the heather of its juice! making the cows' milk not worth a button for making butter. This is the wisdom (he says) of the nineteenth century, found up near the clouds behind Greenock. When, at length, they found a welcome, the bees began to work instanter, and in four minutes the first bee was seen to enter, bearing pollen; then

another and another, faster and faster, until (the fifteenth minute after being opened) every entrance of every hive is crowded with burdened bees. Between August 12 (when I left them) and October 5, when I brought them home, I visited them twice, and deprived three of them on my second visit. The result of their sojourn in the moors, comprising, of course, these deprivations, is given below. The hives consisted of two collateral and two storied, reduced prior to removal by depriving them of supers, side boxes, and side bars, to as nearly the same weight as possible, with the double object of testing the two systems where food was plentiful, and of avoiding the paradox of carrying honey to the heather.

The Collateral Hives.—The tare of boxes, boards, &c., being deducted, the net weights are as follow:—

	August 12.	October 5.	
No. 1. Collateral . . .	20 lbs.	48 lbs.	Gain . . . . 28 lbs.
No. 2. " . . .	23 "	53 "	" . . . . 30 "
No. 3. Storied . . .	21 "	49 "	" . . . . 28 "
No. 4. " . . .	24 "	50 "	" . . . . 26 "

Large Morello Cherry.—At Whalley Abbey, Lancashire, died, during the last autumn, the celebrated Morello Cherry, which was considered one of the finest trees of the kind in the North of England. Symptoms of decay had been noticed in it for several years, to the regret of all who knew it; and the proprietor, under the advice of Mr. Pontey, had spared no expense to prolong its life, but to no effect. This stately tree sank rapidly at last, and the Abbey has lost one of its well known and noblest ornaments. It has been conjectured to be nearly as old as the dissolution of the Abbey, and many and sad, since that time, have been the changes and vicissitudes which it has witnessed. When in full growth and health, in the month of May, it was singularly beautiful. Rising to ninety feet high, with a proportionate and graceful diameter, the whole covered with pure white blossoms, like a spotless pyramid of snow, it contrasted most favorably with the ivy-covered ruins, the dark foliage of the Scots firs and elms, and other adjoining trees. From its branches the mistletoe hung down, a plant almost unknown in other parts of East Lancashire, and its huge limbs cast a shadow over the high altar of the conventual church, the last resting-place of all that is mortal of the abbots who designed and executed the surrounding beautiful buildings. It contained two hundred and fifty-three solid feet of wood, one hundred of which have been sent to Messrs. Bell & Copeland, to be wrought up into appropriate furniture, to be kept as memorials of this splendid tree.—Clivigeb, in *Gardener's Chronicle.*

De Candolle's *Prodromus*, Vol. 14, Part II., has been published, comprehending Thymelæaceæ by Meisner, Santalaceæ by Alph. De Candolle, and some small allied orders. And thus we are brought almost to the borders of the great unisexual region of endogenous plants, for there is little now to intervene between the difficult race of Laurels and the great mass of Euphorbiaceæ. In order not to delay the progress of the main work, Prof. De Candolle proposes to proceed immediately with Begonias, leaving room for the others in the series, as was formerly done with Solanaceæ. Two volumes more are expected to complete Exogens. Prof. Andersson undertakes the Salicaceous order—a difficult task, requiring great judgment as well as experience. It is computed that the fourteen volumes actually completed contain 50,509 species, arranged in 4,525 genera. The first volume was begun in 1822, and appeared in 1824. If we suppose two botanists, on an average, to have been incessantly engaged on the work for thirty-six years, then 1,403 species will have been determined annually, or 701 by each—good work when species have to be carefully examined and compared, as has been the case with the Prodromus, and not put together with paste and scissors, *à la Walpers.* Who but a De Candolle could have had the power to carry

through so mighty a work as this, in which there will be, eventually, a complete systematical account of all plants known at the time of publication of the several volumes?

How to enjoy a Garden.—Dissatisfaction with ourselves and doings is the first step to improvement. Grumbling dissatisfaction that we have not the variety, grandeur, and extent of some one else who possesses and employs twenty or fifty times the resources, is one of those low, degrading forms of envy with which I can have no sympathy save that of pity, and, more especially, because it so blinds the judgment as to prevent the right use of the resources within its reach. The farmer's wife who manages a couple of flower beds in such a manner that the wealthiest could hardly make them more beautiful, is not only worthy of *all* honor, but gives the best evidence that, with increased resources, she would manage twenty *nearly* equally well. I have put in the word *nearly* advisedly, because the smaller the garden, other things being equal, the brighter and more telling should it be; and it is easier to make it so than when various gardens have to be attended to. Look on a couple of beds a tangled mass of flowers and weeds, and where and what would be the condition of twenty beds? Superior quality and beauty, be the sphere of their action small or large, will ever command approbation; and without these, mere extent will only be an extensive annoyance.—*Correspondent.*

Report of the Third Annual Fair of the Hancock Agricultural Society, and List of Premiums awarded. This is printed at "Carthage," and the two words of "Hancock" and "Carthage" are not followed by the name of any *State*, a defect which often surprises us. It is not uncommon, indeed, for newspapers to be issued for years and years without the name of the State in which they are published being anywhere inserted. Does not this look too much like a mere local circulation, and as if the locality was too much *all the world* the makers know? This report, we presume, emanates from New York or Illinois, but are not quite sure.

EDITORS TABLE.

WEATHER.—The snow which fell in early March disappeared on the 15th, when the bluebirds began to sing, and we are, as we go to press, sanguine of approaching gardening weather.

THE NOTES OF THE MONTH, in our present number, will be found to be quite spicy and interesting. Mr. Saunders holds a ready and able pen, which we have some difficulty in getting him to wield often enough; Cincinnatus has drawn him out in defence in a manner that makes his "Note Preliminary" one for reference. The readers of that curious, facetious, and valuable book by Chandos Wren Hoskyns, republished by Lewis F. Allen in Buffalo, 1854, the "Chronicles of a Clay Farm," will recognize the agreement between the book as well as between the writings of the most scientific agricultural writers and the "Notes of the Month" for April.

WINTER RURALITIES OF BOSTON.—A reliable Boston correspondent gives us a curious and amusing account of the newest winter fashions of the people in that city. It appears they were all crazy on the subject of skating. All the young men and maidens from twelve to twenty-five years old did nothing in March but skate on Jamaica Pond. They say on fine days 5000 might be seen, including the heavy fathers and mothers, who went on the ice to chaperon their daughters. The latter were then hustled by the young men, and skated and slid against until they were all mixed up, when the daughters disappeared in the melee. The Balmoral petticoat was another great feature of the scene. The whole lake was surrounded by the carriages of the wealthy Bostonians, from twelve to four o'clock, or high change, and the sight, it is said, was beautiful. There was a great number of excellent skaters among the young ladies, who can cut their names backwards; the best skater was the greatest belle, and as for the young men, he who could not cut a ring backwards on the *outside* skate was nobody. Instead of balls and parties, the whole visiting and gayety the past season was on the ice. The young men and girls made up parties of fifteen and twenty, and went up Charles River ten miles to some village, where the heavy fathers who had driven out met them, and had a jolly dinner, when young Boston skated back by moonlight, and old Boston dozed back in the coaches. Healthful, all this, for mind and body; but we protest against the treatment of the old folks, and wonder the young ladies should disappear under the circumstances.

FIRE.—We sincerely regret to learn by a private letter from one of Dr. Grant's neighbors that a new propagating house, ninety feet in length, with 12 to 15,000 grape-vines (Delaware and Rebecca, &c. &c.), has been destroyed by fire. This is an accident to which such houses are always more or less liable, and should be carefully guarded against.

THE GARRIGUES GRAPE.—Mr. J. Hoopes, of West Chester, Pa., writes us regarding the Garrigues grape, that he observes in the *Valley Farmer* that it is described as superior to the Isabella, on his authority. He has no hesitation, he says, in declaring that "the Gar-

rigues is *nearly equal* in flavor to the Isabella and Catawba, and of the same size; but its greatest superiority over them consists in its extreme hardiness and perfect exemption from mildew." He considers it worthy of general cultivation, particularly in the more northern sections of our country. The berries have a tendency to drop after becoming ripe. He thinks Downing's new work correct on this grape, although the originator always asserted it sprung from the seed of a raisin.

Aquariums.—We have answered a correspondent elsewhere regarding aquariums, with references to former articles on the subject. A few hints for beginners are, nevertheless, in season. No odorous material or poisonous putty should be employed in joining the glass, and all varnish must be entirely dried before use. The shaded back of the aquarium should be placed next the light, as the rays ought to penetrate the water entirely through its upper or horizontal surface. Direct rays of light must be received during some part of the day, being screened by a white blind when the sun may be too powerful; as, should the water become tepid, it would be fatal to many of the inhabitants. Don't overcrowd your tank, but be content with a few specimens, and an occasional change.

The composition of artificial salt water has been found sufficient for zoophytes, but not for fish and other of the higher class of marine animals, except for a certain given time; its ingredients are—

Common salt	3½ oz.;	
Epsom salts	¼ oz.;	
Chloride of magnesium	200 grs.;	Troy weight.
Chloride of potassium	40 grs.;	

To these add four quarts of water, and when the salts are thoroughly dissolved, say on the following day, the liquid must be filtered through a sponge; it is then fit for use.

The common ditch plant, *Valisneria spiralis*, is excellent for imparting oxygen. A glass "fish globe" does perfectly for beginners, and experiments will soon make you expert in selecting water-snails, gold-fish, &c. &c., but, as before observed, be sure you don't boil your water before using it, nor cook your pets by exposing them too much to the sun.

The Grape.—We publish, in a former page, an interesting article from Mr. W. N. White, on hybridizing the grape. Mr. W. informs us that in consequence of the receipt of a dozen new varieties from Dr. Grant, the report of the Georgia pomological committee on the species of *V. labrusca* will be deferred for a time. Also, that they now have reason to consider the Delaware grape *not* a variety of V. æstivalis, as they supposed. In the committee's former report last year, speaking of the blossoms of V. rotundifolia, a misprint makes "more were found female or pistillate only" read "*none* were found."

Planting Potatoes.—They say abroad that the secret of getting potatoes ripe in August that will keep all winter, is "to set them well sprouted. There is no occasion to put them in early. The month of August is the critical time for the winter potato. But by sprouting the tuber before setting, you obtain nearly a month's advantage, so that when the disease does come, the plant is in a stronger state than it would otherwise be, and is thereby enabled to repel the attack." The author who thus writes in the Royal Agricultural Society's Journal is the Rev. E. F. Manly, and there may be something in his remarks.

Grafting the Grape Vine.—We have met with many experienced persons who have never seen the grape-vine grafted. The process is so easy, that thousands who are anxious to possess the newer varieties, should especially take care of their old roots and insert scions of the new. No clay, or covering of the grafted part is necessary beyond the natural

soil, below which the graft is to be inserted. Saw off your stock and put in your scion with two or three buds, wedge-fashion, as in the cleft-grafting of fruit-trees, and then cover up a few inches, leaving one or two buds above ground; where the stock is very large, and inconvenient to split, a gimlet-hole, so made as to bring the two barks together, has answered. The sprouts of the old stock, as they spring up to rob the graft, must be pulled off. Grafts often bear some fine clusters the first season of growth, and many more the second.

In this way, the old stocks of wild grapes removed from the woods are very useful, with due care. We have lately seen an old Catawba vine that was wanted for shade forty feet off, laid down for a year till it had rooted well, and then was grafted with perfect success, and fruited the first season.

Necrology.—We regret to announce the death of Samuel T. Jones, of Staten Island, New York, a most successful horticulturist, and formerly an eminent merchant of New York. These pages have recorded his enthusiasm and remarkable success in fruit culture. We have never seen a greater amount of good fruit grown in the same space; hot-house grapes, peaches, and pears, were Mr. Jones's especial favorites, and nobody had finer. We have measured peach-trees in his grounds much larger in circumference than the body of an ordinary man, and bearing most profusely. His method of treating these trees is recorded by himself in the *Horticulturist* for 1856, p. 501, and may be referred to with great advantage.

Mr. Jones was a native of Philadelphia, resided some years in England, and returning to New York, was the active mind in developing the mineral resources of the neighborhood; in the introduction of zinc paint he was conspicuously the leader.

In private life, as a member of the community, and as a consistent Christian, Mr. Jones will long be remembered. As a husband, father, and friend, he is most sincerely lamented by those privileged with his acquaintance.

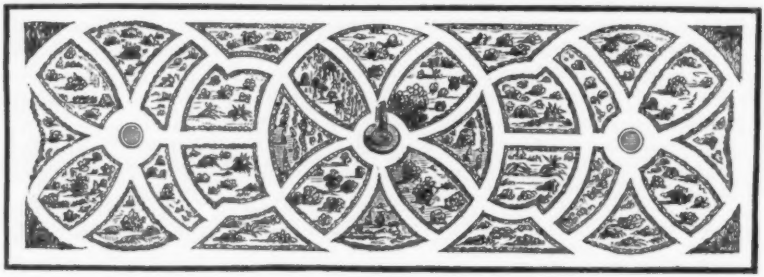
The Death of the Duke of Devonshire is deeply regretted by horticulturists abroad. He is called "one of the most illustrious examples of refined taste and magnificent conception which the horticultural world has ever seen." "The fame of the gardens of Chatsworth," says the *Gardener's Chronicle*, "has spread through the world, and gave an impetus to the formation of the people's parks. To the very last the love of flowers was intensely manifested in this lamented nobleman; they may almost be said to have become a necessity of his existence. When a melancholy attack of illness brought on a debility which was incurable, his pleasure was to be wheeled to some object the beauty of which he still would gaze upon, and the conservatory at Chiswick is fitted up with little contrivances to enable him to stroll feebly among the shrubs which it contains. The Duke died at Hardwicke on Monday, the 18th ult., in the 68th year of his age, as peacefully as he had lived. By none will his loss be more felt than by the Horticultural Society, of which he has been President, since the death of Mr. Thomas Andrew Knight."

Pears.—Mr. J. De Jonge states that it requires at least 15 years before the real merit of a new variety of pear can be completely determined. This term is not too long for most varieties. For those that are fertile, the period may perhaps be reduced to 10 years at the utmost, dating from the time of their first bearing, providing that no time is lost in the nursery.

A White Apricot, dotted with red, has been produced in Belgium, where one amateur planted last year 4000 stones with a view to procure new and good kinds. The apricot succeeds well in Belgium, as many may remember who have travelled there in the season.

A Garden and Fountain.—There is no reason why a suburban garden should not be beautified by water scenery of some kind—by the formal stone basin and fountain, the circular pond shaded with rose arches, and stocked with ornamental fish, or the mimic lake or river, partially hidden to conceal the meagreness of its extent, and the illusion helped out by sloping banks, massive shrubs, and a few water-fowl.

Where the dimensions are small, a basin is to be preferred. Such a tank must not be inclosed by shrubs or a profusion of vegetation, but must offer its white rim in contrast with smooth turf, sloping gently up towards a hillock, out of which the basin rises with its circle unbroken, or only broken in one or two places, by an elegant trailing plant, or piece of appropriate statuary. In such cases, the surrounding borders should be formally laid out with gay exotics, the box borders kept in the neatest trim, the standard roses on the turf few but fine, and anything in the nature of a shrubbery or sylvan retreat placed sufficiently far away so as not to break the formality and brightness which should surround the basin. The fountain may be of a classical design, a mere jet on the surface of the water not having sufficient dignity, while the ornaments of the paths and grass-plat should be elegant vases crowded with gay plants; and light iron chairs, rather than rustic baskets and mossy seats.



In an extensive garden of formal arrangement, laid out in parterres, planted with various exotic shrubs, the centre should be appropriated to an ornamental basin and bold jet. From the centre the paths may diverge and form the radii of a circle, so as to afford approaches to the fountain and views of it from every part of the formally planted scene. The annexed plan for such a garden may be found useful where there is sufficient space to give it fulness of character. The shrubs may be botanically as well as artistically arranged, and a combination of the arboretum and pleasure garden satisfactorily accomplished.

In our next we shall give a sketch of "a garden aquarium."

Professor Johnson's Report.—The "First Annual Report of Prof. S. W. Johnson, Chemist to the Connecticut State Agricultural Society, and Professor of Analytical and Agricultural Chemistry in Yale College," has been kindly forwarded us by Mr. Henry A. Dyer, corresponding secretary. Here is something valuable, some real information for the farmer, which we trust will be spread abroad in an intelligible form by the farming journals. It is worth all the ipse-dixits of ignorant conjectures that form the staple of so many printed works; it is founded upon analysis, and its facts may be relied on. We consider it beyond price; it goes to the root of the matter, and without fear or favor tells us what manufactured manures are of value, what is their commercial value, and which are worthless; the Professor says the Lodi Company's manufacture cannot be recommended. It assures us that cotton-seed is almost as valuable food as linseed cake, and that it is much richer in oil and

albuminous matter; that cattle eat it when mixed with palatable food, and soon learn to eat it with a relish; that it is also a capital fertilizer. "Next to Peruvian guano, this is a substance (cotton-seed cake) which, if its composition proves uniform, is most nearly worth what it costs." This report will be hailed by intelligent agriculturists as of the highest value; it inaugurates a new era; read and study it, all farmers.

HEDGES AND EVERGREENS—*A complete Manual for the Cultivation, Pruning and Management of all Plants suitable for American Hedging; to which is added a Treatise on Evergreens.* By John A. Warder, M. D. New York: A. O. Moore, 1858.

This is a duodecimo of 291 pages, with illustrations, at the price of one dollar. It is a *résumé* of what is known on the subjects it treats of, and might, in fact, be called "A Plea for the Osage Orange;" the reader will find it contains the two following paragraphs—the first from the author, the second from Mr. Ernst, on the Osage Orange:—

Page 126—"The interlacings, as a remedy, would, by a good cultivator, be considered of doubtful propriety, to say the least, except in a very limited extent."

Page 192—"Plashing answers well; it is a simple process," &c. "Plaiting or plashing are the only safe modes of protection, and never should be dispensed with for an outside protection," &c.

It is true that Dr. Warder says: "For my own notions, as to the sentiments contained in the last paragraphs, the reader is referred to the appropriate chapter." The said chapter is intended to controvert the opinions of the *Horticulturist*, which are sustained by Mr. Ernst at page 192, in the fullest manner, one employing the word "interlacings," and the other "plaiting or plashing."

The last part, on evergreens, is intended for learners—the merest tyros in planting, and we submit to the author whether the use, to such, of words like "*adnate*" and "*phytology*" in common writing, is not giving too strong expressions for beginners, who may be obliged to turn to their dictionaries.

Again: we beg book-makers not to follow so frequently the example of the Patent Office in its "Reports." By general consent of naturalists and all scientific men, the Latin names attached to plants when they are significative of a place, a country, or a person, are spelled with a capital letter; Cedrus Libani and not libani; Abies Canadensis and not canadensis; see pages 258 and 254; and again, page 250, Pinus Australis is spelled with a small *a*, and the same error is repeated in *sinensis*, *canariensis*, &c. &c.; it has Californiana for Californica, &c., to say nothing of names being spelled different ways.

We regret that the writer has omitted the enumeration of one of the best, if not *the* best plant for an evergreen ornamental hedge, viz., the Siberian Arbor Vitæ, *Thuja Sibirica*. We most willingly admit that mistakes are easily committed, and that our own printer allows errors sometimes to pass, but nevertheless make these suggestions for the benefit of future editions; the subject is an important one. Dr. Warder can do better.

With regard to the Osage Orange as a hedge plant, we indorse Professor J. B. Turner's opinion, that "the causes of failure have been, in most cases, imperfect preparation of the soil, poor plants, *careless culture*, or the intrusting of the job to professional hedge-makers, who were strangers to their employers."

AMERICAN POMOLOGICAL SOCIETY.—President Wilder requests us to announce that the seventh session of the American Pomological Society will be held in the city of New York on the 14th of September next. Circulars will be issued in due season.

HOOPER'S FRUIT BOOK has had a great sale at Cincinnati, and a new edition, with corrections, is in press. Dr. Warder is preparing his work for publication.

Dear Sir: Allow me to call your attention to a plant we have here, called the "Boston ivy," which I presume is identical with the "Australian" or "French ivy," of your correspondent "W." It is the Bryonia palmata, a native of Ceylon. Nat. Order Cucurbitaceæ. It is one of the very best plants we have for hanging-baskets, or vases, in the conservatory during winter. Wm. Johnston.

[Can we be writing of the same plant? Pray send us a leaf or a flower, one or both.—Ed.]

Dendrobium Nobile.—A splendid plant of this lovely Dendrobe is at present flowering in the collection of B. K. Bliss, Esq., of this place. It is but a small specimen, comparatively, yet has 70 large flowers on, all well expanded. A more lovely object can scarcely be conceived, and such is its beauty that, when better known, we are sure no collection of hothouse plants, however small, will be considered complete without it. Most truly yours,

Springfield, Mass., Feb. 10, 1858. Daniel Barker.

Cuphea Eminens.—Ed. *Horticulturist:* In a recent number I notice a correspondent recommending the Cuphea eminens, as one of the most valuable winter blooming house plants ever introduced. In reading the report of the committee on flowers of the Massachusetts Horticultural Society, I observe they speak of it as utterly worthless. I am much interested in winter blooming plants, having to supply bouquets largely for our families, and was about to increase it largely; but now I hesitate. It is quite possible the plant exhibited in Boston was poorly grown, or illy flowered, as I have myself seen very valuable plants brought out in a very dubious condition in order that its owner might have the doubtful credit of being its first exhibitor. I should very much like to have the opinions of others who have grown it, if you think desirable. The committee's opinion of Canna Warscewickzii I fully indorse, and inclose you a few flowers from a spike I have now open.

"A Bouquet-Maker."

[The flower is a glorious deep crimson, and a valuable plant both for leaf and bloom.—Ed.]

Plant Cabinets.—Ed. *Horticulturist*—Dear Sir: I have no doubt many of your readers were, as I was, much pleased with your remarks on these structures. By some such contrivance, many who are now deprived of the luxury of a few flowers, may have them in perfection. I think I would sooner consent to be deprived of any source of pleasure than that which my little conservatory affords, and am gratified whenever I see anything tending to afford the masses an opportunity of similar enjoyment. I write now to remark that a neighbor who has *not* a bay window outside, has contrived to make one *inside* the common plain one, by a double sash; and the way her plants luxuriate in this small "house" is the admiration of every passer-by. Should you take time to honor my little place with a call one of these days, I will take you to see it. The dry air of rooms seems to have an injurious tendency on plants; and it is really surprising to see how well they do in these cases; besides removing the annoyance which watering plants in rooms in the usual way oftentimes entails.

Philadelphia. M.

Dioscorea Batatas.—Mr. Editor: In renewing my somewhat procrastinated subscription to your spirited and interesting periodical, it may not be out of place to write a little of *our experience* with the above, what we consider a valuable esculent. We have cultivated this potato for two seasons, and the only noticeable objection so far is that the tubers penetrate the earth so deep that it is hard to get them out whole.

I can enumerate in its favor its productiveness, good eating qualities, exemption, so far, from disease; but, above all, its extreme hardiness to withstand our most rigorous winters

in the open ground without the slightest protection. A few hills left out the first winter ('56 and '57) have grown luxuriantly the past season, whilst of those now in the ground (over ¼ acre) we dug two hills a few days ago, and had them served up in a pudding to quite a household, and is remembered among the good things that gratify the appetite.

I am aware that I run some risk in testifying thus to the merits of the Dioscorea, as much has been said against it through the public prints, resulting in some cases from bad culture and soil, and planting *too small and imperfect tubers;* yet I firmly believe when some reasonable time elapses to get acquainted with its characteristics, it will rank as one of the institutions of our glorious country. SAMUEL COFMAN.

Carroll, Fairfield Co., Ohio.

THE VERBENA.—We have an interesting communication on the verbena, from James S. Negley, for which we cannot find space this month. Mr. Negley has established a valuable nursery in Pittsburg, Pa., where he prides himself justly on having all that is new and valuable; he names to us a number of the finest roses for sale, which are but rarely to be yet found in our eastern collections. Pittsburg is an admirable point for distribution to the West and South, and we should have no doubt that our friends in Natchez, for instance, would find it to their advantage to procure novelties from thence.

Barnes & Washburn, Harrison Square, Dorchester, Mass., put up their collections of flower-seeds in a most attractive way. Boxes with elegant covers, *printed in gold*, contain respectively 22 varieties of the best kinds for one dollar, and 44 kinds for one dollar and seventy-five cents; 10 varieties for fifty cents, and extra varieties as enumerated in their advertisement, which it will be well to consult.

John Perkins, of Moorestown, New Jersey, a few miles from Philadelphia, has a fine collection of large, well-grown evergreens, larger than are usually found in nurseries, which some who desire immediate effect may thank us for noticing.

CINCINNATI HORTICULTURAL SOCIETY.—Will our friends of this society permit us to suggest more care in the printing of their official reports in the *Cincinnatus*. The old black letter book on gardening, reprinted at this office, is not the "*New Orleans* Orchard;" that city was unknown as a book-publishing town in 1626. And the flowering of the *Jasminum nudiflorum* in January is not an evidence of precocity; it is a winter flower, and therefore will bloom at that season unless cut off by unusual rigor.

WINTER APPLES.—We have from Mr. R. Peters some very fine winter apples, worthy of note, viz: Nickajack (already figured in this work), Green Crank, Limber Twig, and Sharkley. The latter, Mr. P. thinks the best of all apples for the "cotton growing countries," as a late keeper. Nickajack ranks next as a keeper. Green Crank is preferred by many to the Nickajack, but does not keep so long. To our taste it is the best apple of the whole. Limber Twig is well known at the north, and is valued by the "old times" men, who hauled hundreds of miles to market, and then *shovelled* the apples into and out of the wagons; after all this they would keep until April and May.

PROFITS OF PEAR CULTURE.—We have ready for our next number an article on this subject, from the pen of Lewis F. Allen, Esq., of Buffalo, New York; and from Mr. Chorlton one on the grape, in-doors and out.

TWO NEW VEGETABLES are attracting much attention in England, the Cottager's Kale, described as a very fine Brussels sprout, the sprouts of which will not heart; and the Custard Squash, a very superior sort.

Strawberries.—If you are troubled by birds, wide distances are dangerous, unless you protect. Kill slugs in winter with lime or ducks. Do not water while the plant is in flower, but from the time the berry is formed till it reddens you cannot pour on too much. Put clean wheat straw between the ranks, and water every third day, in sultry weather, copiously. Begin manuring directly after the crop is off and the runners taken. Preservation of life is better than the chance of a resurrection. Potash is a good manure. Use guano (sparingly), soot, coal ashes, wood ashes, liquid manure, cow and horse droppings. Stale night-soil is believed by many to be the best. New maiden earth is also good for a dressing.

After the crop is off cut off all the leaves and dress handsomely, stirring the soil about two inches deep between the ranks, and one inch near the plants. This brings a luxuriant crop of leaves, which protect the crown in winter, and throw off the wet. This will not do, unless you do it *early*, and are a "high manurer."

Now, if you will attend to these rules, you will get good and fine Strawberries. Remember, says a good gardener, the words—Manure, Pump, or Irrigate.—W.

Artificial Fruit.—We saw the other day at H. A. Dreer's, 327 Chestnut Street, Philadelphia, the handsomest plate of artificial fruit that has ever come under our notice. The Peaches were beyond measure tempting, even to the incipient decay. On inquiry, it appeared they were made by a lady who also devotes her attention to teaching the art—Miss C. Smith, No. 1013 Coates Street, Philadelphia.

Cerasus Japonica Alba Flore Pleno.—For a fine specimen of this most beautiful double flower, we are indebted to David Ferguson, near Laurel Hill Cemetery. It eclipses the old double flowering cherry and the spireas; is perfectly hardy, and of easy cultivation, and a most lovely flower to force.

Answers to Correspondents.—Geo. M. Brown—The "Turk's cap" cactus—Mela cactus communis—is, we believe, sometimes called "Pope's Head," though it is unusual for it to branch out in the way you describe yours to do. We could not name it from your description. Cactuses, to bloom well, require a season of growth, and one of rest. It is a good plan to set them out in the open air about May; give them a liberal supply of water for one or two months, then gradually dry them off for winter, and they will well reward you. A Cereus multangularis, and C. Peruvianus, annually bloom, thus treated, in our garden.

James Moore: In propagating from unripe shoots, either of the vine or of any plant, bottom heat is of great advantage, and in many cases essential to success. If the cuttings can be so placed, as not to have too great a heat at first, say about 55°, and after a week or ten days increased to 60°, and so on to 65° or 70°, they are more certain to strike than when kept in a uniform heat. Any sharp fine sand, washed so as to have any impurities it may contain separated, is as good as silver sand for striking in.—Ed.]

John J. Goldsmith, Waverly, Ill.—The pea sent is well known; it is called the Oregon, and has not given satisfaction where we have known it to be planted.

Vigneron.—The term *muscat*, applied to particular kinds of grape, is not derived from the perfumed or musky flavor of those varieties, but from the berries attracting flies, *muscæ*, for which reason the Latins called the kind *vitis apiaria*.

W. H. B., York, Pa.—We know of no such article as *Black* sulphur. Probably you are right in your supposition.

Amy, Baltimore.—Remove the trees very carefully in the spring, about the time of its first growth. Do not allow the roots to get dry.

A summer-house, such as you propose, may be erected by employing cedar poles, &c., according to plans dispersed through the volumes of the *Horticulturist*, which you are good enough to say you have been "a lover of since its first publication."

George H. Brown, Kingston, N. Y.—We have exhausted the subject of Aquariums long since, and cannot in this case "try back." See vol. for 1855, p. 302; vol. for 1856, p. 405; vol. for 1857, pp. 47 and 281. For the book published by Dix, Edwards & Co., apply to your bookseller; it is very full. We are constantly referred to for information already imparted, and as we publish indexes, it might often save trouble to consult them.

Myron R. Benton.—We shall be greatly obliged by a sight of the remarkable apple you mention, at its next ripening.

Names of Plants.—(H. H.) The Fern is the Asplenium flabelliforme, a very pretty greenhouse Fern, and useful for baskets. The other pretty little plant has often been mentioned under the name of the Artillery Plant, and called Pilea muscosa, or Thelygonum cynocrambe, a very interesting little plant for the stove. The Cactaceous Plant is one of the Opuntia family, probably Opuntia ficus Indica; but we cannot be certain of this from a bit so small.

(E. S.) Ipomæa quamoclit. (D. McEwen.) Phytolacca decandria, or Virginian Poke. (J. L.) Cerinthe major, a garden annual.

Catalogues, etc., Received.—H. A. Dreer's Catalogue for 1858, includes premium roses, dahlias, verbenas, and a select list of fruit, and ornamental trees and plants, for sale at 327 Chestnut Street, Philadelphia, or at his garden near the stand-pipe of the West Philadelphia Water Works, and enumerates various things, as well as seeds, in request at this season.

Experiments and Observations upon the Sorghum Saccharatum, or Chinese Sugar Cane. By Joseph S. Levering. For sale by Henry A. Dreer, 327 Chestnut Street, Philadelphia.

Lyons, Wayne County, N. Y., Nurseries. E. Ware Sylvester advertises in this way all the fruits, evergreens, &c. &c.

A Supplementary Priced List of Plants for sale in the spring of 1858, by W. C. Strong, Brighton, Mass., five miles from Boston, comprises New Hardy and Foreign Grapes, New Roses, Fruit Trees, New Bedding and Greenhouse Plants, &c. &c., and offers inducements, rarely exceeded, to purchasers.

Sheppard's Forwarding and Commission Horticultural Nursery and Seed Agency, 159 Front Street, New York. Circular.

Protest against the Report and Awards on the Field Reapers and Mowers and Harvest Implements, by the U. S. Agricultural Society, at Syracuse. By R. L. Allen.

Descriptive Catalogue of the Rochester Commercial Nurseries. H. E. Hooker & Co. An excellently considered list of valuable fruits, &c.

A. O. Moore's Agricultural Book List; 140 Fulton Street, New York; advertises especially Olcott's Fifth Edition on the Sorgo and Imphee.

Mr. H. A. Mish, Harrisburg, Pa., has issued a Catalogue of Fruit Trees at reasonable prices, Grapes of the newest and best kinds, Strawberries in great variety and quantity, and Shade and Ornamental Trees. We expect to learn that this enterprising nurseryman's grounds will very soon rank with any in our own or sister States.

The Agricultural College of the State of Michigan, is a pamphlet setting forth the advantages of the institution, and giving a list of the numerous students who are availing themselves of this most useful measure. We recognize very able teachers, and among them our friend John C. Holmes, as Professor of Horticulture, and Treasurer.

Monthly Bulletin of the United States Agricultural Society, Washington. A valuable publication.

Landreth's Rural Register and Almanac for 1858. This Register takes precedence in one important respect; it is to be had for nothing—or at all events a thankee. But it has other and great merits, being compiled by one of the best cultivators, and the largest seed-grower in the world. Address, with a stamp, D. Landreth, Philadelphia. The information it contains is reliable, and there is no more correct almanac.

James M. Thorburn's Annual Descriptive Catalogue of Flower Seeds, with practical directions for their culture and treatment. There is no better, and as their seeds are punctually sent by mail, or as directed, they deserve and will, we hope, receive extensive patronage.

The Sweet Potato; its Northern Culture. Directions in a printed sheet, from O. S. Murray & Son, Twenty Miles Stand, Warren County, Ohio. Excellent instruction, which we may take occasion to print.

Catalogue of Select Annual, Biennial and Perennial Flower Seeds, cultivated and sold by David Landreth & Son, 21 South Sixth Street, Philadelphia. Reliable and dependable, as are their garden vegetable seeds, now as well known as the name of the President of the United States, and household treasures wherever known.

R. Buist's Select Catalogue of Greenhouse, Hothouse, and Hardy Plants, 322 Market Street, and Darby Road, Philadelphia.

R. Buist's Catalogue of Select Roses, Rosedale Nurseries, Darby Road, Philadelphia. These two Catalogues are well worthy of attention. We are free to say that few if any establishments in this country contain the variety of desirable plants that Mr. Buist cultivates. His preface on the Rose is very satisfactory. Mr. B. spells the rose we noticed favorably last month Vicompte des Cazes, and not Vicomptesse.

Barnes & Washburn's Descriptive Catalogue of Choice Flower Seeds, Dorchester, Mass. Another of Dahlias, Verbenas, Petunias, &c. &c. These gentlemen are carrying on a flourishing business, and deserve credit for enterprise and careful regard to the interests of their customers.

Catalogue of Fruit and Shade Trees, Shrubs, Roses, Vines, Bedding Plants, &c., for sale by John W. Adams, Portland, Maine. A valuable catalogue of a good collection.

Address before the Georgia Horticultural Society, on its 19th Anniversary, Feb. 12, 1858. By John E. Ward. Savannah, 1858. Eloquent and terse.

The Commercial Crisis; its Cause and Cure. Two Lectures delivered in Montreal. By William Brown, Cote-des-Neiges Nurseries, near Montreal. Here is one of the craft lecturing on a new topic, and we mean to read what he says.

Descriptive Catalogue of Garden, Field, and Flower seeds, sold by Wm. Thorburn, 492 Broadway, Albany, N. Y. Comprises everything required.

Messrs. Bridgeman, New York, have sent us their valuable Spring Catalogues, but just too late for examination.

GOSSIP.

—— The amount of the influence of vegetation, as such, upon the air we breathe, has thus been demonstrated. For every six pounds of carbon which plants have accumulated in their structure, they have withdrawn from the atmosphere twenty-two pounds of baleful carbonic acid gas, and replaced it with sixteen pounds—an equal bulk—of life-sustaining oxygen. Consider the quantity extant merely in the trunks of trees. The trunk of a single giant pine contained 356,000 pounds of carbon—a quantity sufficient to propel, on our railroads, 200 tons of merchandise, a distance of 3,560 miles! In its growth, this tree withdrew from the air 1,305,333 pounds of carbonic acid gas, and replaced it with 949,333 pounds of oxygen gas—a quantity sufficient to maintain the respiration of a single man for 1,100 years.

Add to the quantity of carbon gathered by this one huge California tree all that is contained in the forests and herbage of the world; all that accumulated in the soil as vegetable mould, peat, and in other forms, the product of the vegetation of by-gone ages. And finally, let the estimate embrace all that belongs to the bodies of the whole existing animal kingdom, and we shall have the expression, if it can be made in figures, of the amount of a single (though the largest) element which vegetation has withdrawn from the atmosphere. If we multiply the vast amount of carbon by sixteen, and divide it by six, we obtain the number of pounds of oxygen gas that have, in this process, been supplied to the atmosphere, and this is the only operation in nature which gives to the air free oxygen gas—that indispensable agent of animal life. Animals consume it, and give back carbonic acid, which, while it is injurious to their life, is the principal element of the food of vegetables, is consumed by them, and the oxygen restored for the use of the animals. Hence the necessity of the vegetable kingdom in purifying the air we breathe, and hence, too, the impure air of cities, where animal overbalances vegetable life.

—— The Cactus tribe—growing under the burning rays of a vertical sun, on dry sand nearly devoid of vegetable mould, and beneath a sky that for three-quarters of a year yields them not one drop of rain—are tumid, with a watery juice, of inestimable value to the parched traveller. Even the wild ass, cautiously stripping off the dangerous spines with his hoof, knows how to help himself to a delicious draught, when traversing the desolate steppes.

—— The Tree, or Cow Cabbage, is one of the most remarkable of the cabbage kind, having a hard and woody stalk, averaging five feet in height, and used for walking-sticks. In the Island of Jersey it reaches the height of eight or ten feet and more. This is mainly produced by daily pulling off the lower leaves as fodder for the cows, leaving foliage only at the top; thus a small garden has almost the appearance of a plantation of palms. Planted close, as living fences, they keep out fowls and small animals. Sheds are thatched with the dried stems; they serve as stakes for kidney beans, peas, &c., and as cross-spars for the purpose of upholding the thatch or roof of the smaller class of farm-buildings, cottages, &c., and, when kept dry, are said to last upwards of half a century. At a distance from the coast, and in colder latitudes than Jersey, this cabbage always degenerates. The walking-sticks are almost handsome.

—— We have learned, says Dr. Gray, what the food of plants is, and whence they obtain it. Their universal food is rain-water, which has absorbed some carbonic acid, nitrogen, and ammonia or its compounds, from the air, or dissolved them from the decomposing remains of former vegetation already existing in the soil, whence it has also dissolved a variable quantity of earthy matter. This liquid is imbibed by the roots, and carried up through the tissues of the stem; the crude sap is carried into the leaves; these and other green parts of plants (the *chlorophylle*) constitute the apparatus of vegetable digestion. The agent (the motive power which puts this most curious chemical apparatus into action) is solar light. This is the indispensable agent by which lifeless mineral matter (earth and air) is transformed into the organized substance of living plants, and, consequently, of animals. Such is the important part which light performs in vegetable digestion—that initial step in organized existence upon which, as the first link in the chain, all the rest absolutely depends. Hence the Creative fiat, 'Let there be light,' was the immediate precursor, as it is the indispensable condition, of organized and animate existence. Again: It is clear that the oxygen which is given to the air, in ordinary vegetable digestion, comes from the decomposition of carbonic acid. Plants take this latter gas from the air, directly or indirectly; they retain its carbon; they restore to the air pure oxygen. This is the principal material which is given up to the air, and it alone renders it fit for the breathing and life of animals. To verify this, expose some freshly-gathered leaves to the sunshine in an in-

verted glass vessel, filled with water, so as to collect the bubbles of air which rise, and which are nearly pure oxygen gas. The evolution of this gas goes on while the sun shines, but immediately stops when a shadow is cast over the leaves, and is resumed when the screen is withdrawn, or when a gleam of reflected sunlight is cast upon the leaves from a mirror; thus, showing how entirely the whole depends on sunshine. In nature's operations (as in the Daguerrean operation), diffused daylight answers the purpose, but, in our rude experiments, we cannot quite imitate the delicacy of her processes.

—— "In the parish churchyard of Aldworth, in Berkshire," says a correspondent of a London paper, "stands a yew-tree, which is much larger than any I have ever seen or read of elsewhere. This tree is nine yards, or twenty-seven feet, in circumference, four feet from the ground. The denuded branches spread over a very large surface; their shadow, it is affirmed, at one time covered nearly an acre of ground. Its once lofty head is decayed.

Notes for the Month.

APRIL.

VINEYARD CALENDAR.

BY R. BUCHANAN, CINCINNATI, OHIO.

This is a busy month for the vine-dresser, as, in this and the three succeeding months, the crop has to be made. Driving in stakes that may have been loosened by the frosts of winter, replacing by new ones those that have rotted off, tying the vines to the stakes, and, towards the latter part of the month, hoeing or ploughing the vineyard, if the ground is in order, are the principal duties that crowd upon the vine-dresser in April. Some of the stakes that have rotted off at the surface of the ground, may still be long enough to sharpen and drive in again. Stakes should be six and a half to seven feet long at first, so that they may bear to be sharpened, and driven in two or three times; they may thus be used for many years.

The process of tying the vines to the stakes is simple, and has been given in a former article, but I will here repeat it. The branch is bent round in the form of a bow, or three-fourths of a circle; the top part or centre of this bow is fastened to the stake by a willow tie; the top end of the branch (which now becomes the lower part of the bow) is either fastened close to the stake by the same kind of tie, or left a few inches from it. This is done in soft weather, in the forepart of the day, when the branch is pliable, and will not readily break.

Hoeing or ploughing should only be done when the ground is mellow, or in order for working.

This is also the month for *planting new vineyards.* Lay off the ground (previously prepared) by a line, and put down a stick about fifteen inches long where each vine is to stand, at distances of three feet by six, three and one-half by seven, or four by eight feet apart, as may be preferred. Then plant the cuttings or vines, when the ground is in order, by digging a hole about a foot deep (the width of the spade), and fifteen inches long. Plant two cuttings, in a slanting position, eight inches apart below, and one inch above ground, leaving the top bud even with the surface, and fill the hole up nearly full, to be afterwards filled up at the first hoeing. If both cuttings grow, take up one to replace failures, or cut it off under ground, as but one vine should be left to each stake. *Vines* may be planted a foot deep, and the holes filled up at once.

The *wine* has to be merely treated as directed in last month. Keep the casks full, and the bungs tight.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

A Note Explanatory.—The natural anxiety which every right-minded man feels for his own accuracy in words written or spoken, and in justice to those of your readers who peruse the "Calendar of Operations" communicated by me to your pages, renders it an imperative duty, on my part, to notice the animadversions on these articles by "Cincinnatus" in the March number of the *Horticulturist.* He accuses me of negligence and carelessness in their

preparation, and that, in consequence, there are frequently errors in my advice. On this point I at once admit my sensitiveness, as I would consider it an insult both to yourself and readers, were I to advocate a mode of practice that a lengthened experience had not satisfied me to be correct, or advance statements that I had not proved and weighed by every available means in my power before making them.

In my opening number (January, 1856), I alluded to a difficulty that I had before experienced in writing calendars, viz: "That calendars, in general, are either too brief to be valuable, or too lengthy and minute for the limited space of a monthly periodical." I further signified my intention of attempting to steer a middle course, and it has therefore been my constant aim not only to avoid useless repetitions, but to make my remarks as comprehensive as possible, consistent with clearness. How far I may have been successful in doing so, I of course cannot be a competent judge. It may be that I have,

"In laboring to be brief, become obscure."

But I well know, that if my desire had been merely to fill a certain amount of pages, I could,

"With far more ease, have told a longer story."

Your correspondent seems anxious that his remarks should not be considered as being made in any carping spirit. I would have been less inclined to think so if he had not misquoted *my* remarks, and attempted to falsify my meaning by disconnecting sentences, with a view of obscuring any clearness or accuracy of expression which they contained. With regard to the advice which your correspondent deems objectionable, I do not, on again perusing it, wish to make any alterations. It is true, that, by extending the paragraph, it might be rendered so as to be more readily understood; but I submit that, taken in connection with the general tenor of my calendars, there is no room for doubt as to the meaning intended to be conveyed.

In the "Calendar" for October last, I remarked that "the relative advantages of fall and spring planting is open to much discussion. So much depends upon local circumstances, that diversity of opinion is of all things most likely. One man will plant in October, another in December, and, in both cases, it will be considered *fall planting*." I mentioned the circumstance as one reason for diversity of opinion on the practice, as I find many people consider planting in October, November, and December, equally, as fall planting. Is it necessary for me to add that I do not look upon December planting as coming under the appellation of fall planting? In the October "Calendar" for 1856, I remark that "in the fall the soil is warmer than the air; the formation of roots proceeds while the branches are dormant." Further on: "But to insure these good results, planting should be proceeded with *immediately after the leaves have fallen;* if delayed beyond October, success will be less certain."

To come more particularly to the objections of your correspondent; in the "Calendar" for last November I remark: "In sheltered situations, trees may yet be planted; do not, however, plant in a hurry, but let the ground be thoroughly prepared, and in good condition." My meaning is surely obvious enough, which is: that rather than plant in a hurry, or before the ground is thoroughly prepared, to defer it until spring. This meaning cannot for a moment be doubted by reading out the paragraph. "If you find it more convenient to get your trees now than in the spring, or if your orders have to come from a more northern locality than your own, by all means secure them at once; and when they arrive, have a deep trench prepared, and lay them in closely, covering well, at least half up their stems; *they will then be ready to plant at the earliest fitting moment in spring.*" Is this not sufficiently explicit? or is it necessary for me to admit "that waiting for the frost to mellow the soil, is an ill method of effecting early fall planting?"

I have strongly and frequently urged, whenever occasion offered, the primary importance of draining, more especially in clayey soils, and their exposure to the ameliorating influence of the atmosphere, in order to bring them into a condition fitted for cultivation. In the paragraph from which your correspondent has taken his text, I remark: "It is a commendable practice to prepare the holes now, throwing out the soil, and leaving it exposed, to be acted upon by frost; by this means it will acquire a friability not otherwise easily obtained." This amelioration of soil by frost your correspondent considers "all moonshine," and goes on to observe that "summer fallowing and winter freezing," so far as they relate to a system, "belong to the barbaric age of agriculture;" that "fall ploughing of light soils is universally considered by our most scientifically practical agriculturists as positively injurious; that "wet or stiff soils, when ploughed in the fall, are heavier in summer," and this because "the frost decomposes the vegetable fibres, roots of weeds, and past crops;" that "the

more modern," and, as he thinks, "the more accurate conclusion is, that all such treatment of soils is mere cobbling, unworthy of our age." And "if gentlemen wish to render soils friable, they now do it by draining, and adding silicious and vegetable substances;" that "it is better not to plant a tree than plant it in a soil upon which frost will have a beneficial effect in rendering it friable." But if it is "first drained, then get a barrow of decayed leaves from the woods, and a barrow of well-washed sand from the public road, and mix them with the stiff soil, we may go ahead without hesitation." "Turning it up to freeze is a temporary affair, unworthy of being considered a commendable practice." Such is a fair epitome of your correspondent's "confession of faith." It exhibits such total ignorance both of the science and practice of agriculture, that if the writer alone were concerned, I would throw down my pen; for, although I have no particular aversion against entering into the arena of controversy with a well matched opponent, there is no honor in taking the easy advantage of one who, like the Chinese soldiers I have heard of, rushes forward with two or three swords at a time, and that, too, with the hilts of the weapons presented to my hands, and the points sticking in his own.

Bare summer fallowing has in part been superseded by the culture of green crops, but is still extensively practised by intelligent and successful farmers in the best farmed districts of country. On this subject, one of the most accomplished farmers and writers on agricultural matters has the following remarks: "Though it cannot be desirable to see the practice of bare fallows extended (for it exists too much already upon many soils where it might be with every advantage substituted by green crops), it must yet be borne in mind that it is not in the mechanical structure alone that heavy soils differ from light soils; their *chemical difference*—which is quite as great—lies in that essential particular that the clay soil is naturally richer in the mineral constituents required by your crops. Potash, soda, and phosphorus, which you must *supply* to a light soil before you sow it, you have only to develop in a clay soil by deep and frequent stirring, and submitting to the oxidation of the atmosphere. The green crop, with its carbon-obtaining leaves, will no doubt supply organic wealth to either; but inorganic food can come from the soil alone, and if the soil be able to supply it from its own resources, *one-half* the value of the green crop, as a fertilizer, is renounced. Its remaining value as a collector of organic matter from the atmosphere, is the point upon which the question will be poised, of its adoption on a soil which, after effectual drainage, subpulverization, and liming, still retains the character of a 'clay.' Even upon such land (which is not so plentiful as some imagine), experience has yet to prove how far, by deep ploughing and subsoiling immediately after harvest, and making the most of suitable weather between that time and the following summer, the green crop may take its place in a six-course system as profitably as in the four-course system upon lighter soils. The bare fallow is too ancient, too prospectively laborious, and *patient*, not to have deep reason at the bottom of it. Chemistry has discovered the truth which practice has attested. The question may be not whether the fallow shall be abandoned, but whether its objects can be achieved at a less sacrifice of time."

We are told that fall ploughing of light soils is universally considered as positively injurious. The soil must be light, indeed, that is injured by fall ploughing. That there is no such universal opinion, is too well known to require comment; I would, however, in passing, ask "Cincinnatus" to inform us *why* it is injurious?

We are further informed, that clay lands ploughed in the fall are heavier in summer, and for once a reason: "Because the frost also decomposes the roots of weeds," &c. The farmer who grows weeds in sufficient quantity, that his future crop is mainly dependent upon their decaying roots for an existence, is a relic of something, whether of a "barbaric age of agriculture" or not, I will not determine; but I would consider him a fitting companion for Bo-Bo and his father, Ho-ti, as described in Elia's dissertation on "Roast Pig:" Bo-Bo accidentally set fire to his father's cottage, in which there was a fine litter of pigs. Both father and son were so pleased with the burnt remains, that "as often as the sow farrowed so sure was the house of Ho-ti to be in a blaze!"

When planting a tree, it is a matter of paramount importance to have the soil in so finely divided a state that every root will be enveloped, and the smallest crevices and interstices filled. It is then surely a question of moment to know how this friability is to be obtained. The cheapest and most effectual *crusher* is frost. Here is the process described, as I find it in a recent agricultural monthly periodical: "The freezing and thawing process is of vast benefit to soils. Investigations go to show that the fineness of a soil is among its best qualities. Some have gone so far as to say that it matters little what a soil consists of, if it is sufficiently fine; that the New England granite soils, if as fine as those of the Ohio valley, would be as good. This may seem extravagant, and probably is so, yet all will

agree that fineness is a most important quality. Now, a December frost, stiffening the ground for eight, twelve, sixteen inches deep, is a silent, quiet operation, but it is one in which an immense amount of mechanical power is exerted. By reason of the expansion of water at the point of freezing, particle is made to impinge against particle by a slow but irresistible movement, both held as in a vice, and pressed against each other, till probably more particles in an acre of soil are broken up, and divided into two, five, or a dozen, than could be effected by the labor of a score of men in a whole summer. Clay soils are rendered less adhesive, and coarse soils (not made up too much of mere sand, that holds no water) are rendered finer by freezing. Throwing them into ridges in autumn, to give the frost greater access, is beneficial." One more extract on this subject: "That which, under the name of oxygen, we are accustomed to consider as a gas, forms, in fact, one-half of what geologists call the whole solid crust of the globe. In the subsoil, it exists in combination with metallic substances, which, when so combined, we call earths. Until they have been brought into free contact with the air, these earths are said, in the language of chemists, to be in the protoxide state—that is, in a state of early oxidation, containing free acids injurious to vegetation; *by free and complete access to the air, the protoxide is converted into the peroxide, a state favorable to vegetation.* Now, farmer, the question for you is how, as speedily as possible, to convert the protoxide into the peroxide—an enemy into a friend. Paring and burning will do it immediately, but at a cost more (perhaps) than the worth of the land. Subsoil ploughing will do it—in eight or ten years, perhaps. *A winter's frost, if your land is well drained, and well worked the following spring and summer, either as a fallow or manured green crop, will do it in one year.*" This is the language of a practical farmer, whose practical success has been often and justly extolled. I would not dwell so long upon this subject were I not convinced, after twenty years' practical experience, that it is of the utmost importance. It has long been my belief that there are few soils actually deficient in inorganic substances, if, by due exposure to the decomposing effects of the atmosphere, their latent principles of fertility were rendered available. This can only be secured by thorough granulation, and, until this is effected, manure applied is as much thrown away as food upon a disordered appetite, or words upon an unteachable mind.

Your correspondent cautions us not to plant a tree in soil "which frost will have a beneficial effect on in the way of rendering it friable." To this I will simply reply, *that a soil which will not be rendered more friable from freezing and thawing, is incapable of supporting vegetation.* His advice to gentlemen who wish to plant in clayey soils, "to go out with a wheelbarrow for decayed leaves and road sand," is so limited in its application that I fear the only gentlemen who will be likely to adopt it are those

> "*Gemmen* whose lands,
> Inclosed all in bow pots, their attics adorn,
> And whose share of the soil," &c.

The impropriety of planting, generally, in such mixtures, I may at some future time notice more in detail.

With regard to the "hard fisted" gardeners, and their astonishment at my advising the abolition of raking soil finely for ordinary seed crops, it occurs to me that they must have a "soft" spot somewhere. All *good* gardeners know that a finely divided surface will *cake* sooner than when it is rough, and daily act upon that principle.

I feel, Mr. Editor, that I have occupied too much space in replying to the lucubrations of an anonymous novice in horticulture; but since these animadversions are in a measure indorsed by their publication, I had no other alternative than to defend myself, and prove to your readers that my advice is neither hastily nor carelessly given. I now ask your correspondent to point out the errors in my advice to which he alludes in his concluding paragraph, as I am ready to correct any wrong impressions that I may have been the means of creating. So much do I feel interested in this subject, that I will, for the present, waive all the disadvantages I would be under in replying to the carpings of an anonymous writer; but, for the future, all such communications will be considered as unworthy of serious consideration.

VEGETABLE GARDEN.—If the suggestions of former "Calendars," with reference to digging and trenching, have been acted upon, the soil will now be in the best condition for cropping; the ameliorating effects of winter will have left it in a state the most suitable for vegetating seeds. All that will now be requisite in preparing for such crops as carrots, onions, beets, parsnips, &c., is a slight turning up and breaking with a fork, and if done in a dry time, the soil will reduce to a powder. Avoid raking as far as possible. Draw slight furrows with a hoe, and cover the seeds with the same implement, leaving an open, porous surface that will not readily *cake* with rains until the young plants are above ground; afterwards,

hoeing and surface stirring will prevent the formation of a caked surface. One of the disadvantages of a tenacious soil is this liability to harden on the surface after even slight showers; and it is also one of the principal features in the good management of these soils, to stir the surface after every rain. Everything, however, depends upon the time when the stirring is performed. Between the wetting and softening of the soil by rain, and its caking by sun and drought, there is a period when it is in the most favorable condition for hoeing. This is one of those matters in horticulture upon which no definite rules can be given that will be applicable in all cases; the practice that would be suitable for one soil and situation, would be unsuited for another differently circumstanced. In view of the many conflicting opinions which are frequently given in the enunciation of mere practical rules (and which may be either right or wrong according to existing peculiarities), it is a question worthy of more than mere passing notice, whether more real progress would not follow from the promulgation of principles only, leaving every one to deduce the practice for themselves; for it is well known that no amount of explanatory information will compensate for the want of that discriminating knowledge which can only be obtained from practical experience.

Fruit.—In setting out young plantations of raspberries and blackberries, cut down the canes to within a couple of inches of the ground; a young, vigorous shoot will be produced, and the plant become healthy and permanently established. The anxiety to procure a few fruits the first season, is prejudicial to the ultimate well-being of the plants.

Currants and Gooseberries.—These should always be grown as miniature trees, on clean stems nine inches or a foot high. In preparing for bushes of this kind, cuttings of young wood about twelve or fourteen inches long, should be selected, and all the buds cut clean out, except the two uppermost; plants from these will never throw up suckers, will be more fruitful, and, with skilful pruning, may be grown as regular and pyramidal as a Glout Morceau Pear on a quince stock. The Black Currant is worthy of more general cultivation; although not a choice dessert fruit, it is the most valuable of all for preserving, particularly for medicinal purposes; it also makes a superior wine.

Flower Garden.—Plants for the flower garden will now be under propagation, and a liberal supply should be provided, based upon the extent of surface to be planted. To avoid labor in potting, and, also, to economize both in the expense of pots and the space they occupy in a greenhouse or glazed frame, the cuttings of verbenas, heliotropes, &c., when rooted, may be planted in shallow boxes, two or three inches apart, in regular rows; and once a week for two or three weeks before planting out in the beds, run a knife in the centre of the rows, so as to sever the roots; each plant will thus have a small square of soil attached, which can be removed entire, and the plants will start as freely into growth as if they had been individually turned out of pots. There is great opportunity for display of true taste in the arrangement of flower gardens. What is termed the massing system, consists in filling entire beds with one kind of plant, or, in very large beds there may be several distinct patches, but all so distinct and numerous as to be seen from a distance. This kind of gardening is perhaps very appropriate in some situations, but, although we have seen it attempted very frequently, it has never appeared a satisfactory arrangement. It is only suitable for geometrically-formed gardens, and these gardens are themselves in best keeping when connected with a dwelling; the highly artistic character of a geometrical arrangement, and its various accessories, in the shape of vases, fountains, sundials, and statuary, are displayed to greatest advantage in connection with balustrades, terraces, and objects equally artificial in character. Flower beds, when so situated, partake more of surrounding features when distinct kinds of plants are planted in effective masses; and there is certainly an air of refined and artistic beauty in a garden of this style which is not found in the promiscuous planting of ordinary flower borders. But, on the other hand, isolated flower beds or borders are far more interesting when composed partly of herbaceous flowering plants, perennials, and annuals. The old-fashioned foxglove, lily of the valley, larkspur, and mignonette, snowdrops, and grape hyacinth, are surrounded with so many pleasing associations of old homesteads, that we must question the taste that would disband them forever from our gardens.

Planting Trees.—Many kinds of trees (among others, the Norway Fir, Arbor-Vitæ, Hemlock Spruce, Maples, &c.) thrive best on a clayey subsoil. Indeed, all plants seem to attain greatest size and age on soils of this description, doubtless because, in them, there are abundance of the special substances they require for building up their structure, and in which light, sandy soils are deficient. The only evil in clayey soils is their liability to retain moisture to an injurious extent, and their frequent resistance to roots. Draining obviates all this.

PINUS LAMBERTIANA.